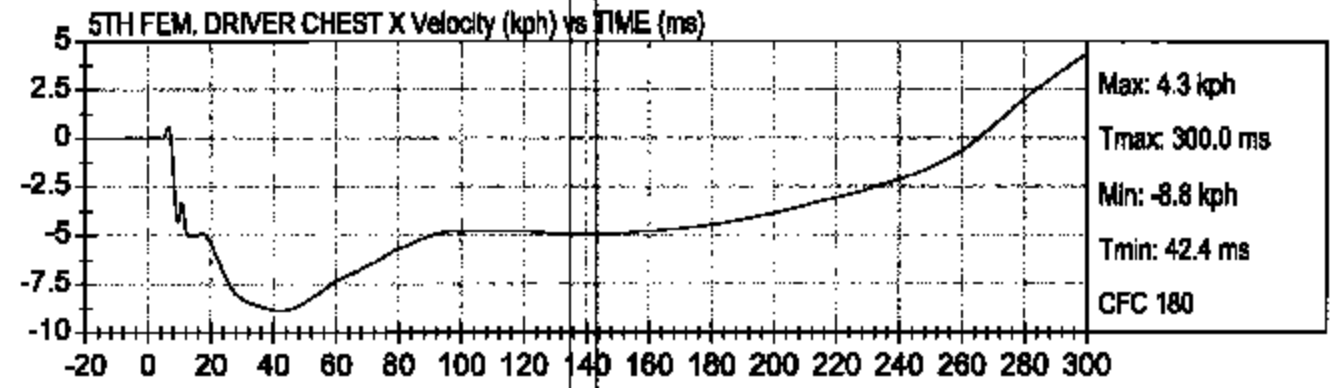
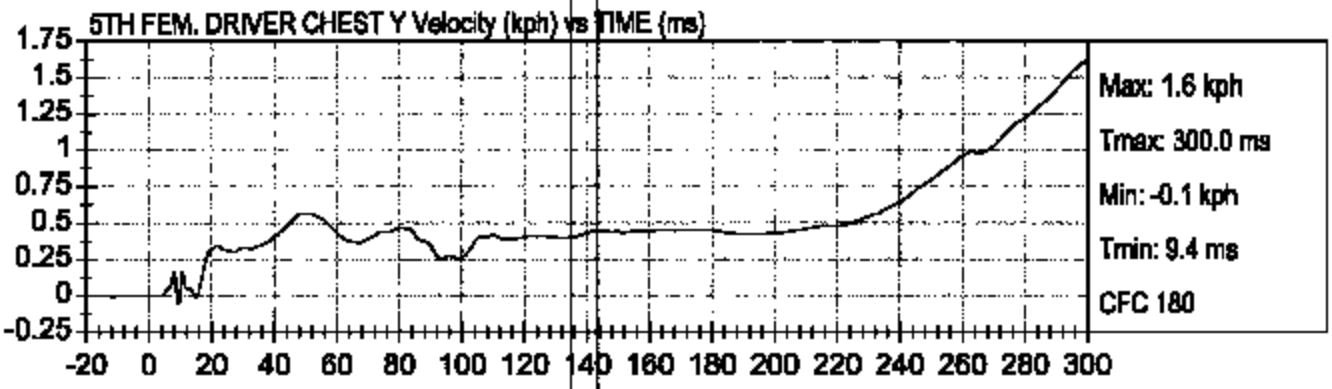
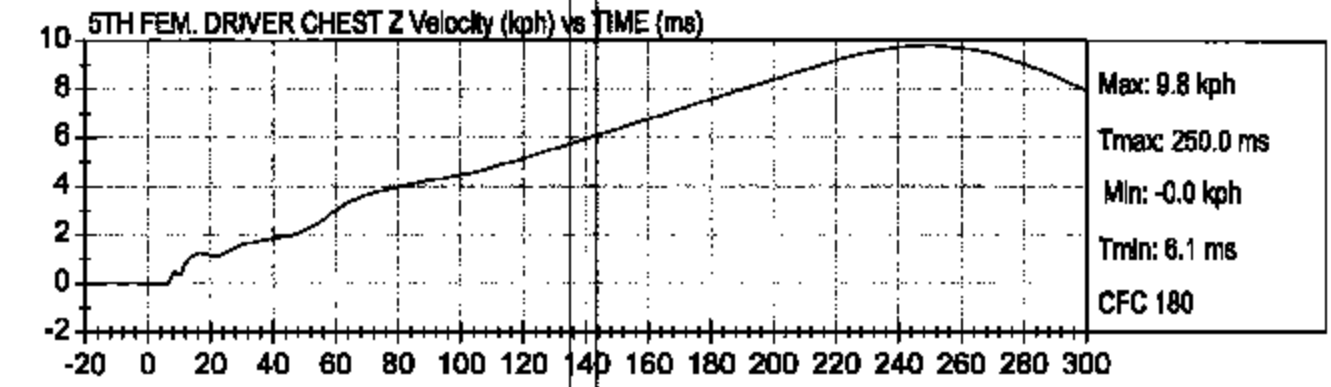
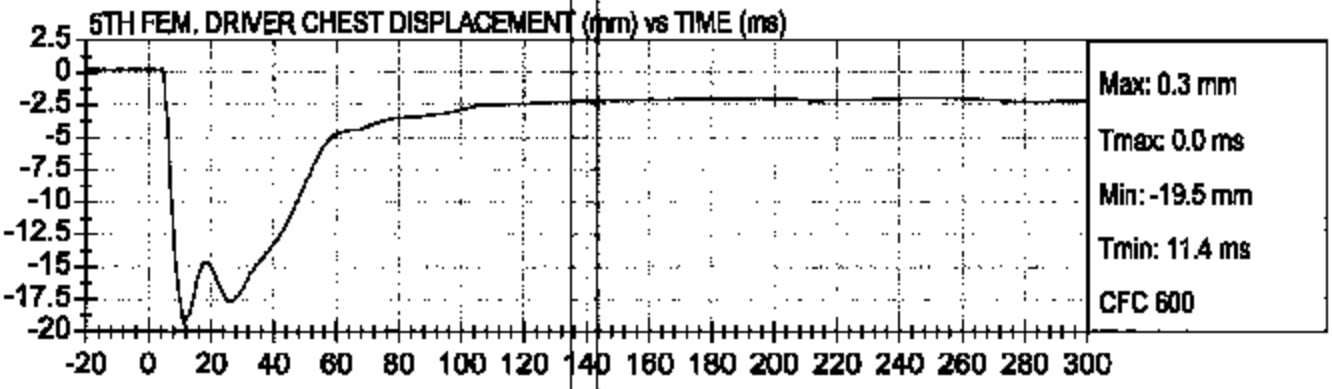
LOW RISK DEPLOYMENT
2004 FORD F-150 (5TH P2)

Test Date: 04/21/04
Speed: 0.0 mph (0.0 km/h)



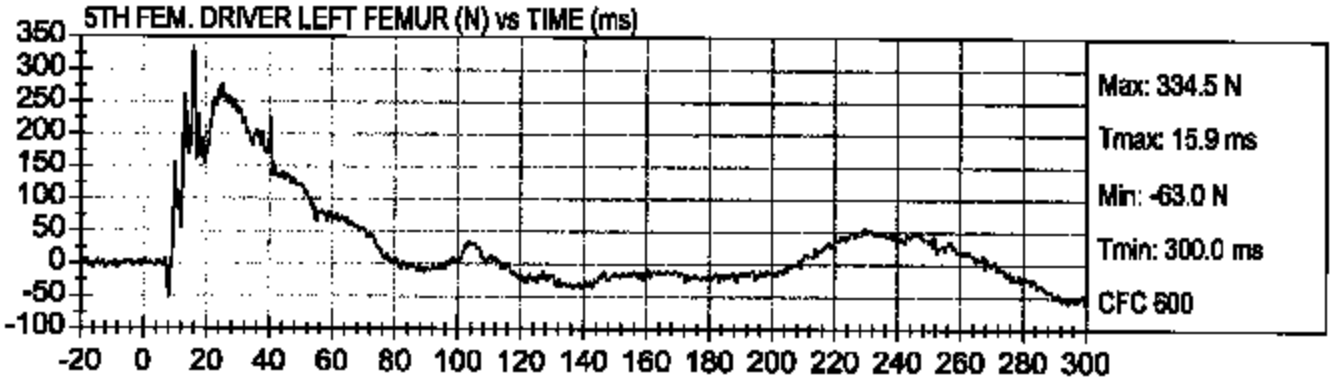


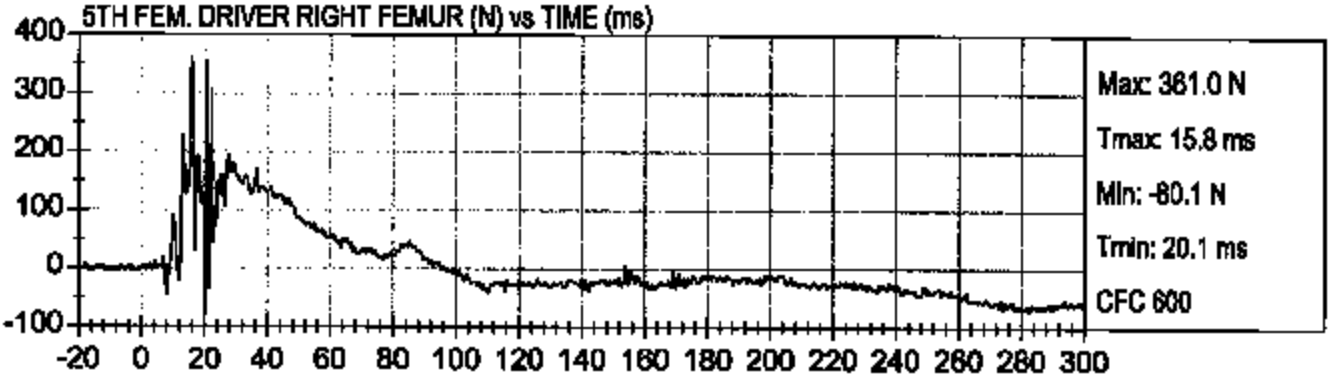




LOW RISK DEPLOYMENT
2004 FORD F-150 (5TH P2)

Test Date: 04/21/04
Speed: 0.0 mph (0.0 km/h)





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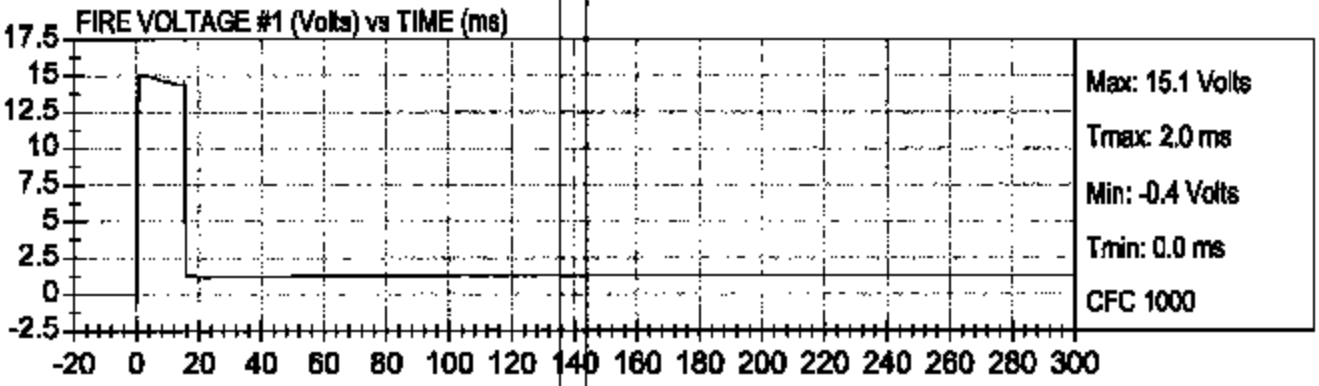
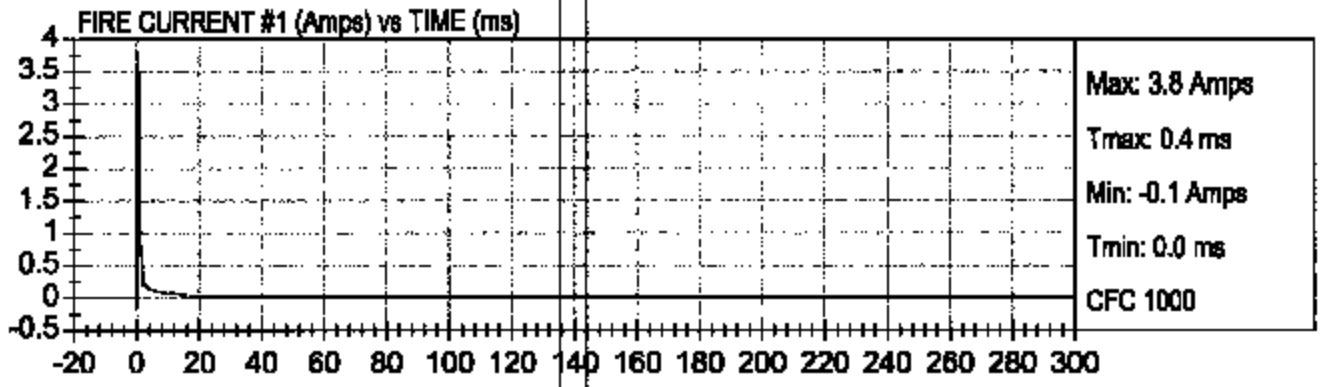
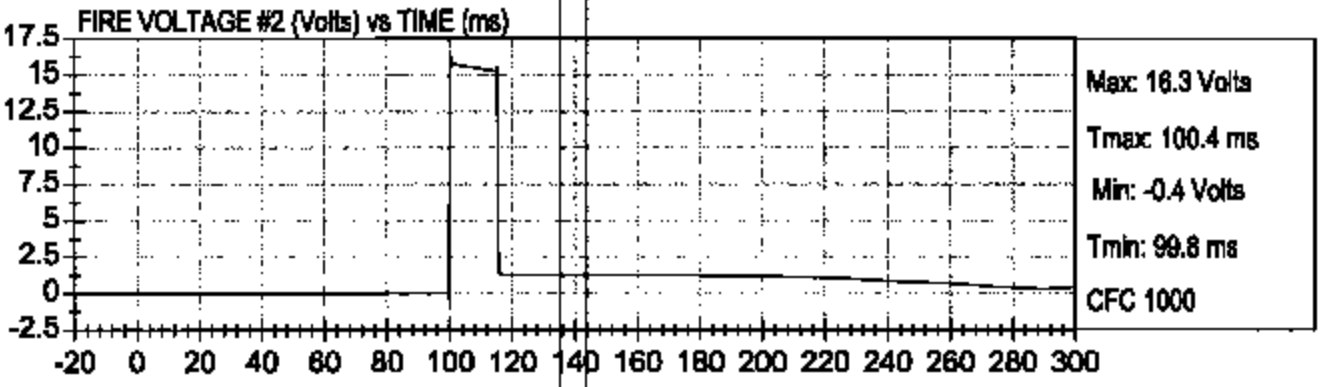
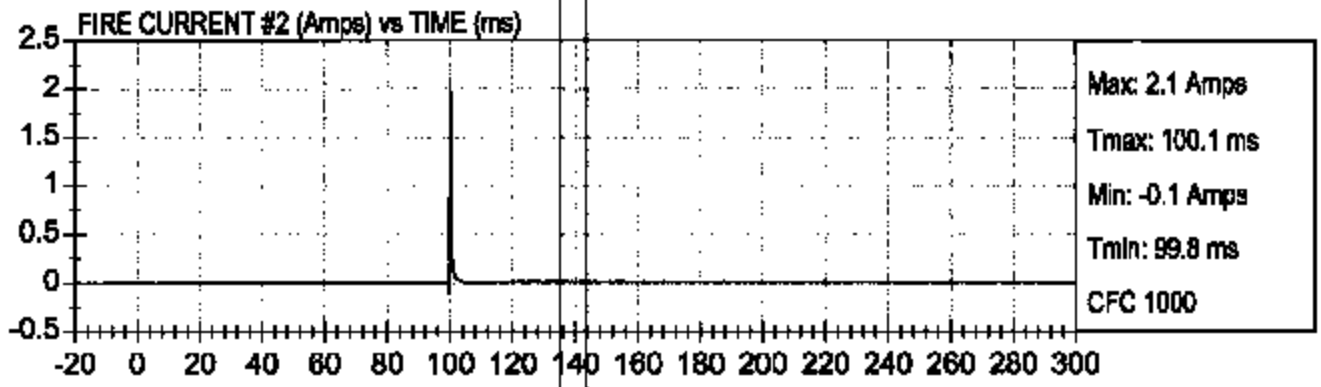
2004 FORD F-150 (5TH P2)

Test Date: 04/21/04
Speed: 0.0 mph (0.0 km/h)









LOW RISK DEPLOYMENT
2004 FORD F-150 (5TH P2)

Test Date: 04/21/04
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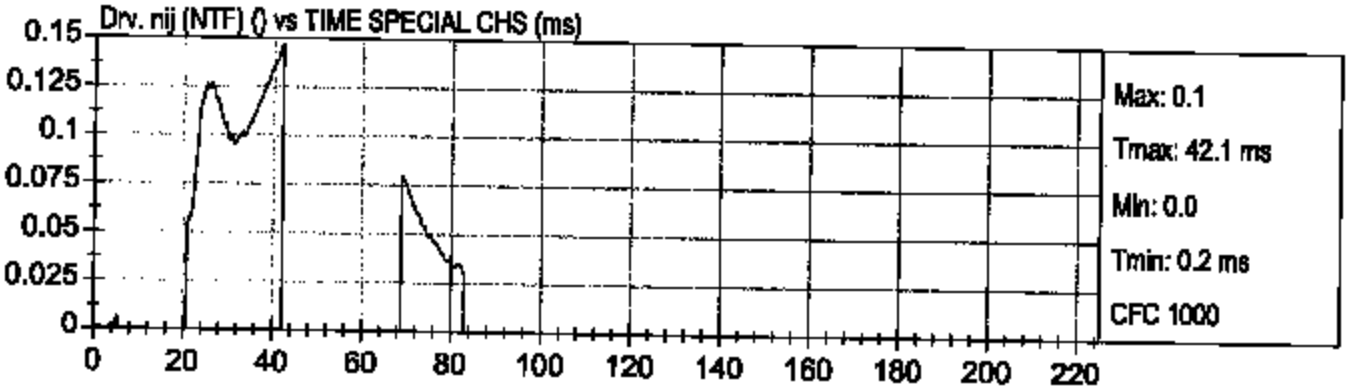

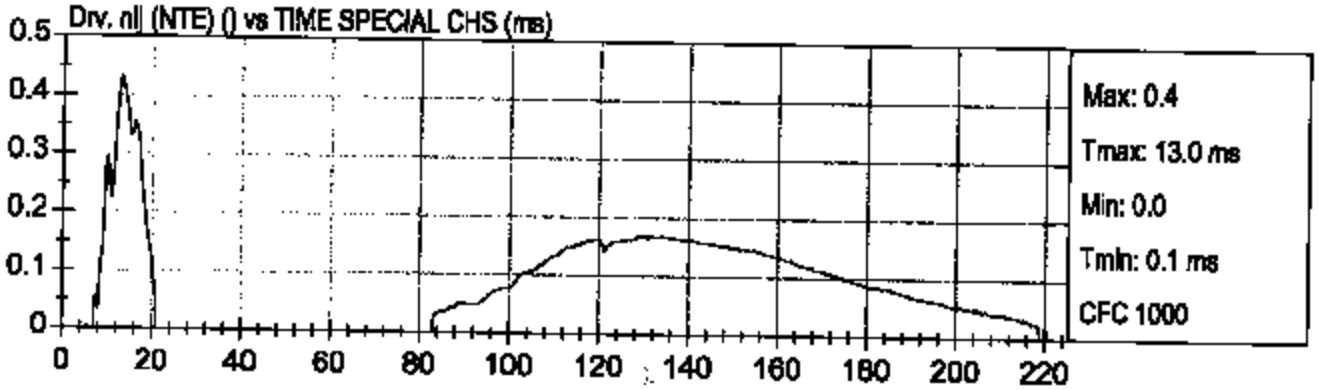

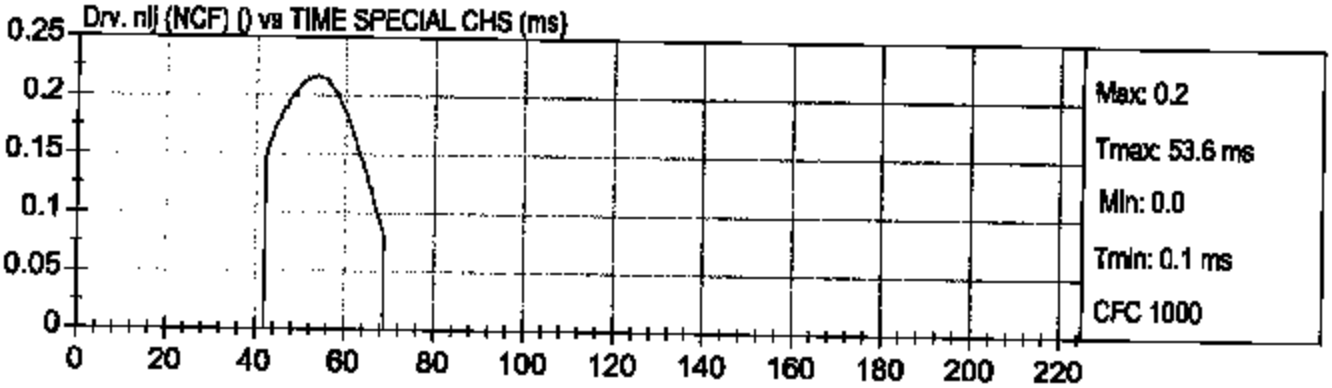

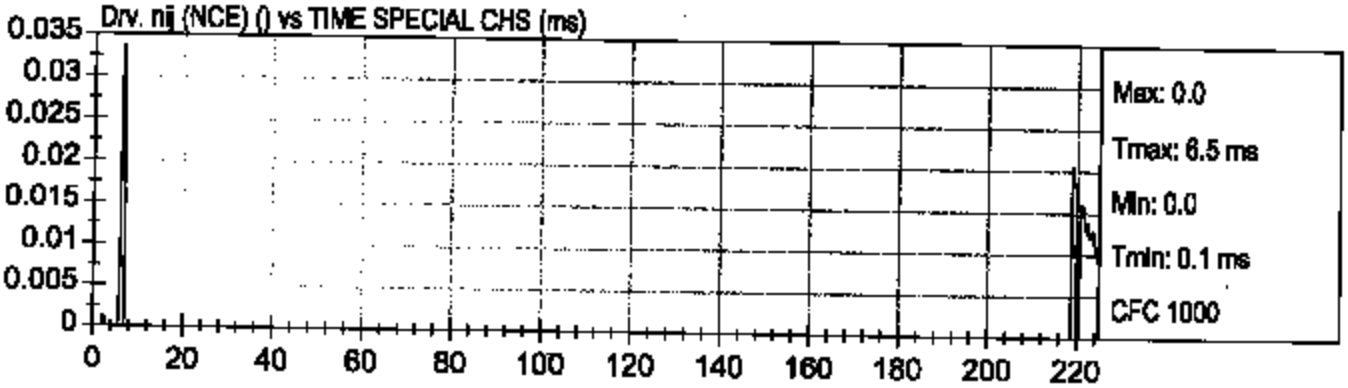

APPENDIX C

CRASH TEST PHOTOGRAPHS

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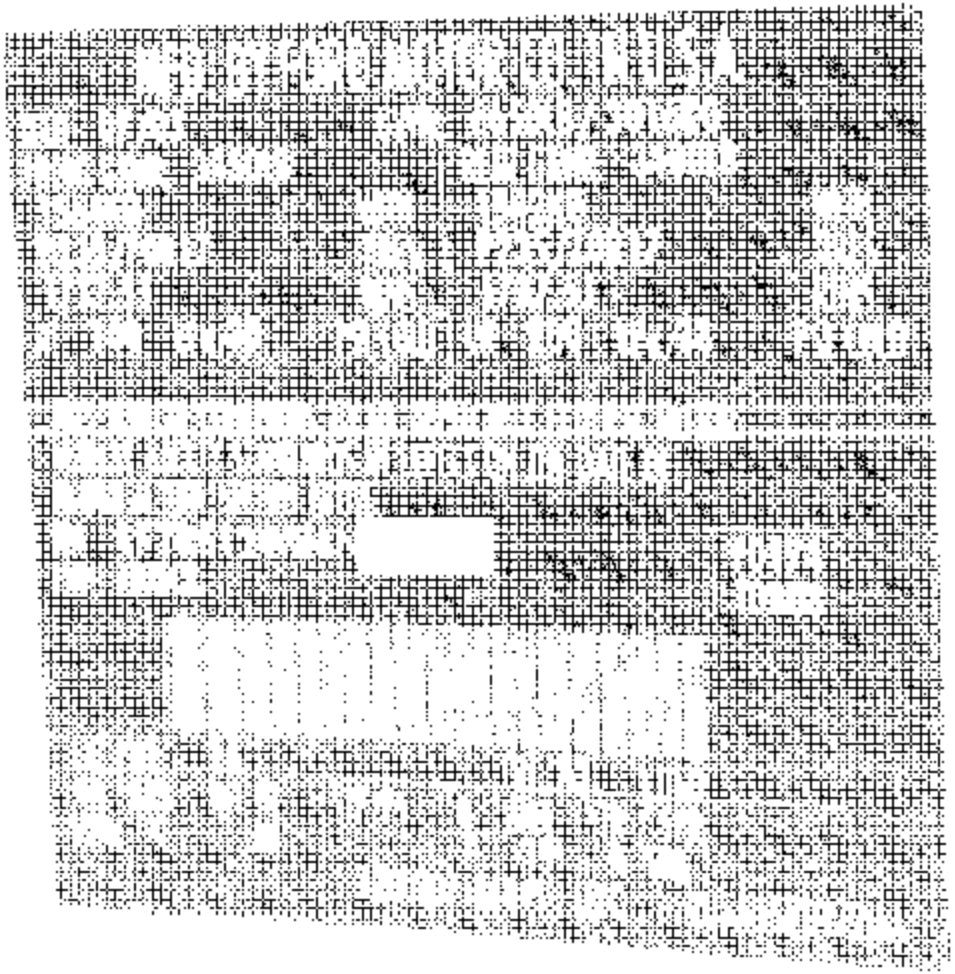
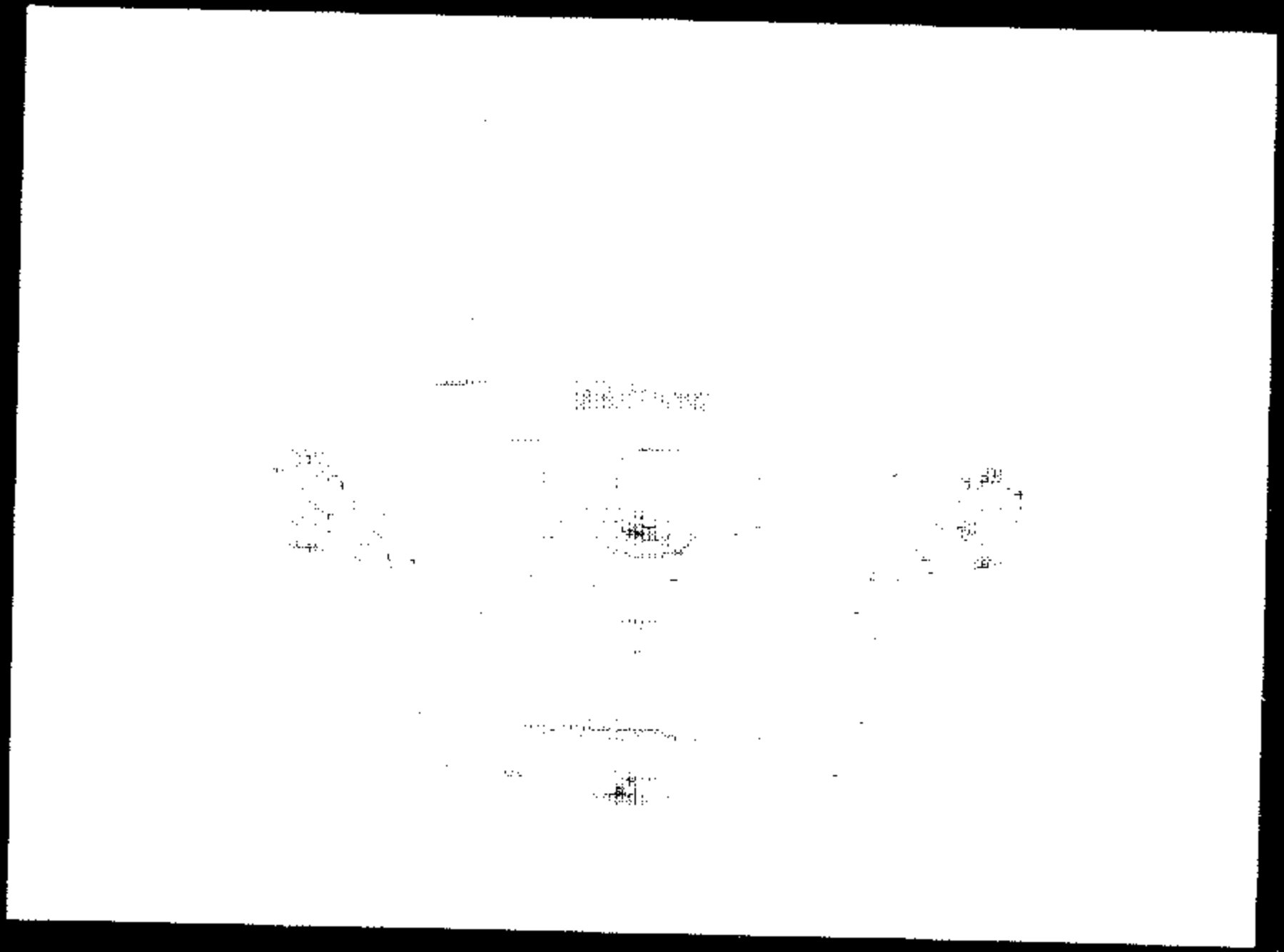
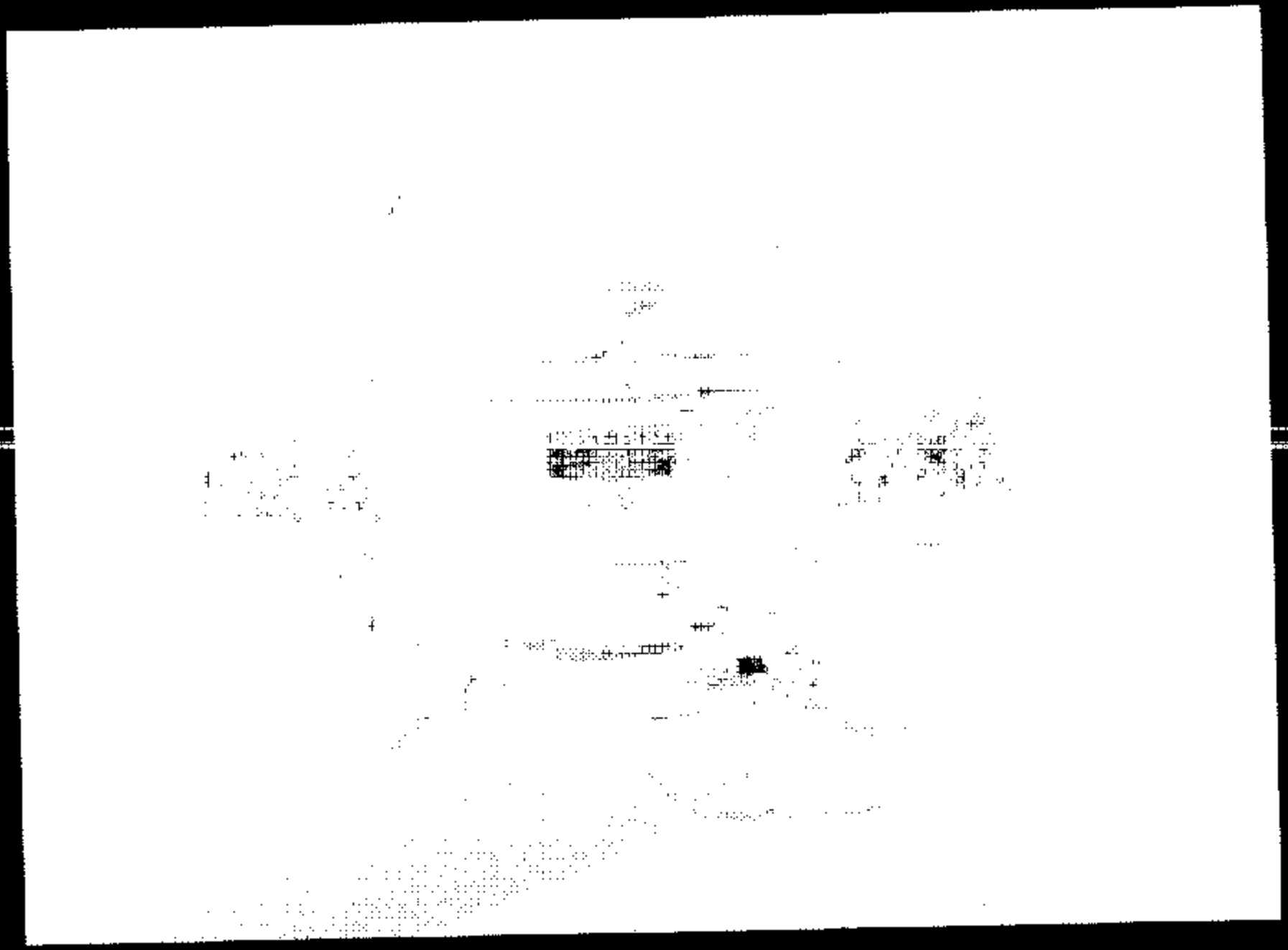


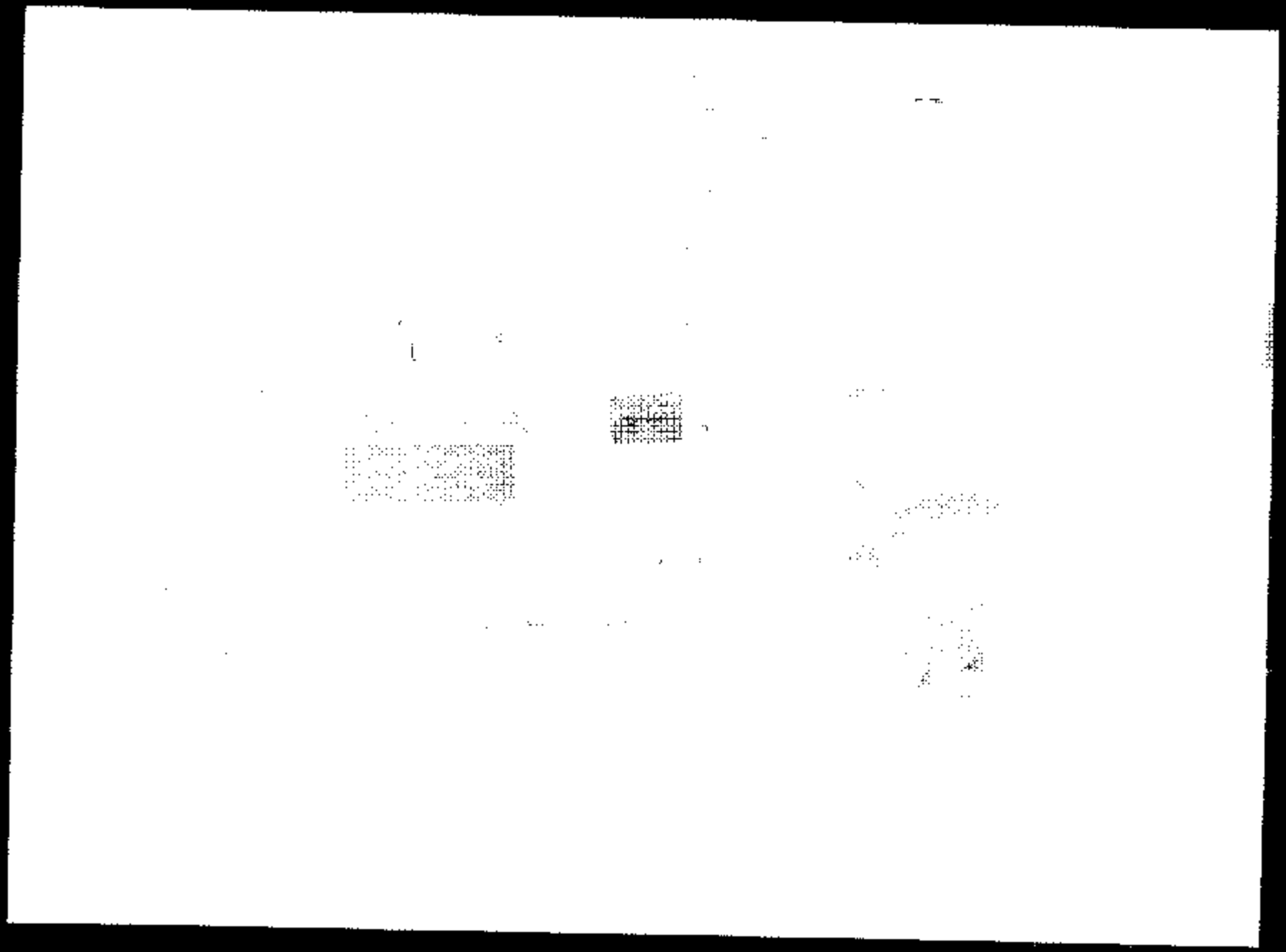
Vehicle Certification Label/Tire Placard



Pre-Test Front View of Test Vehicle



Post-Test Front View of Test Vehicle



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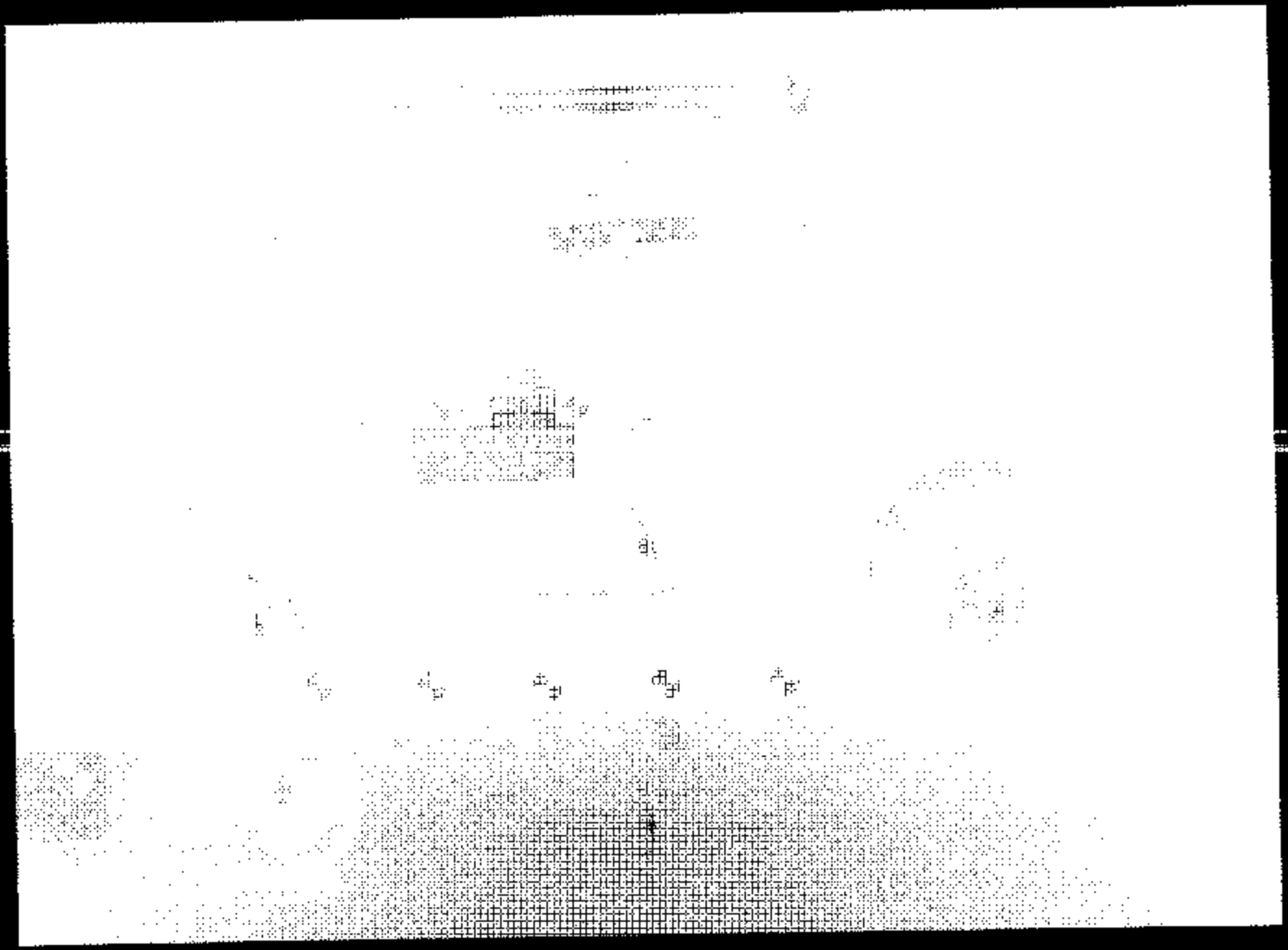

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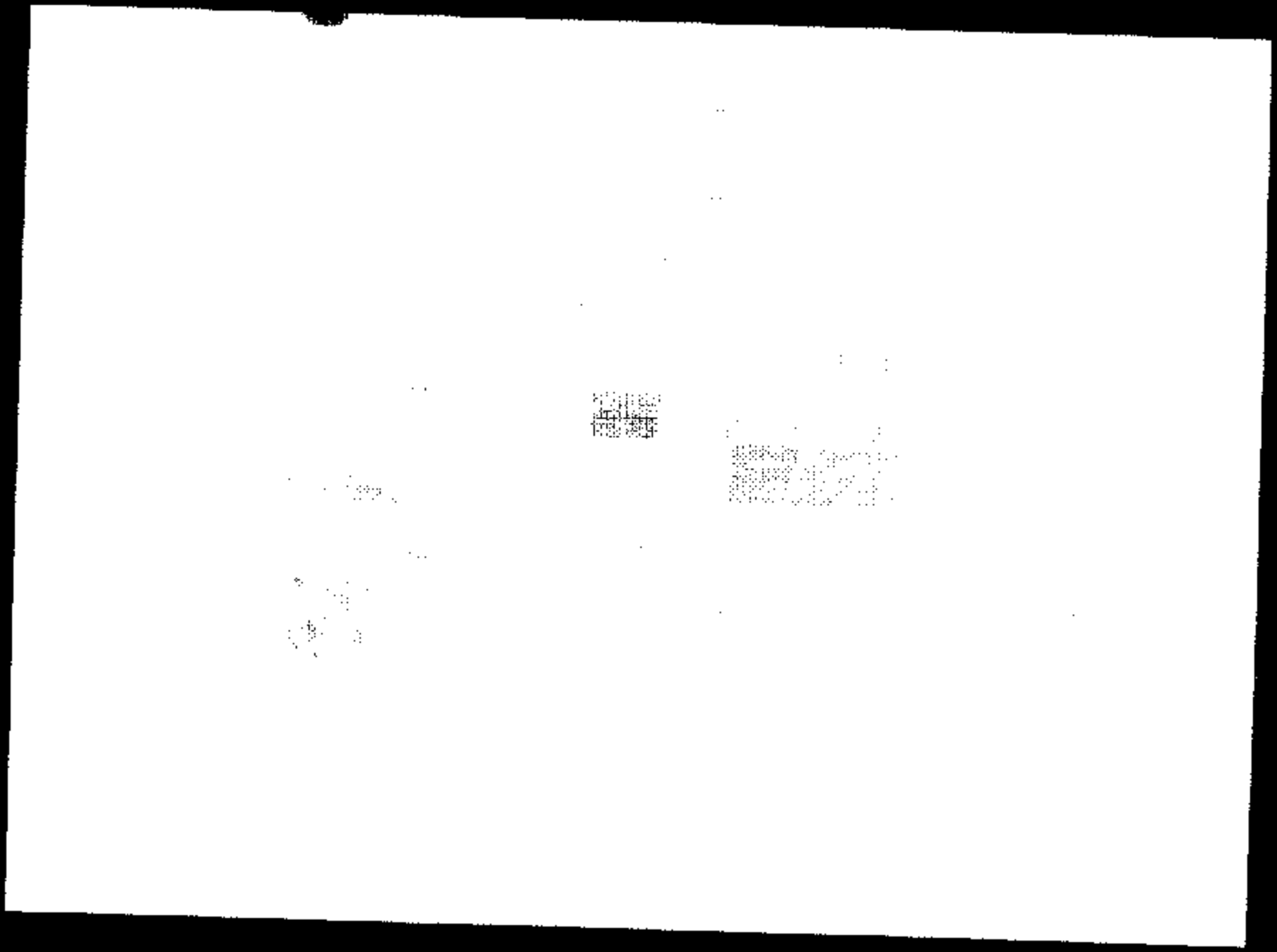

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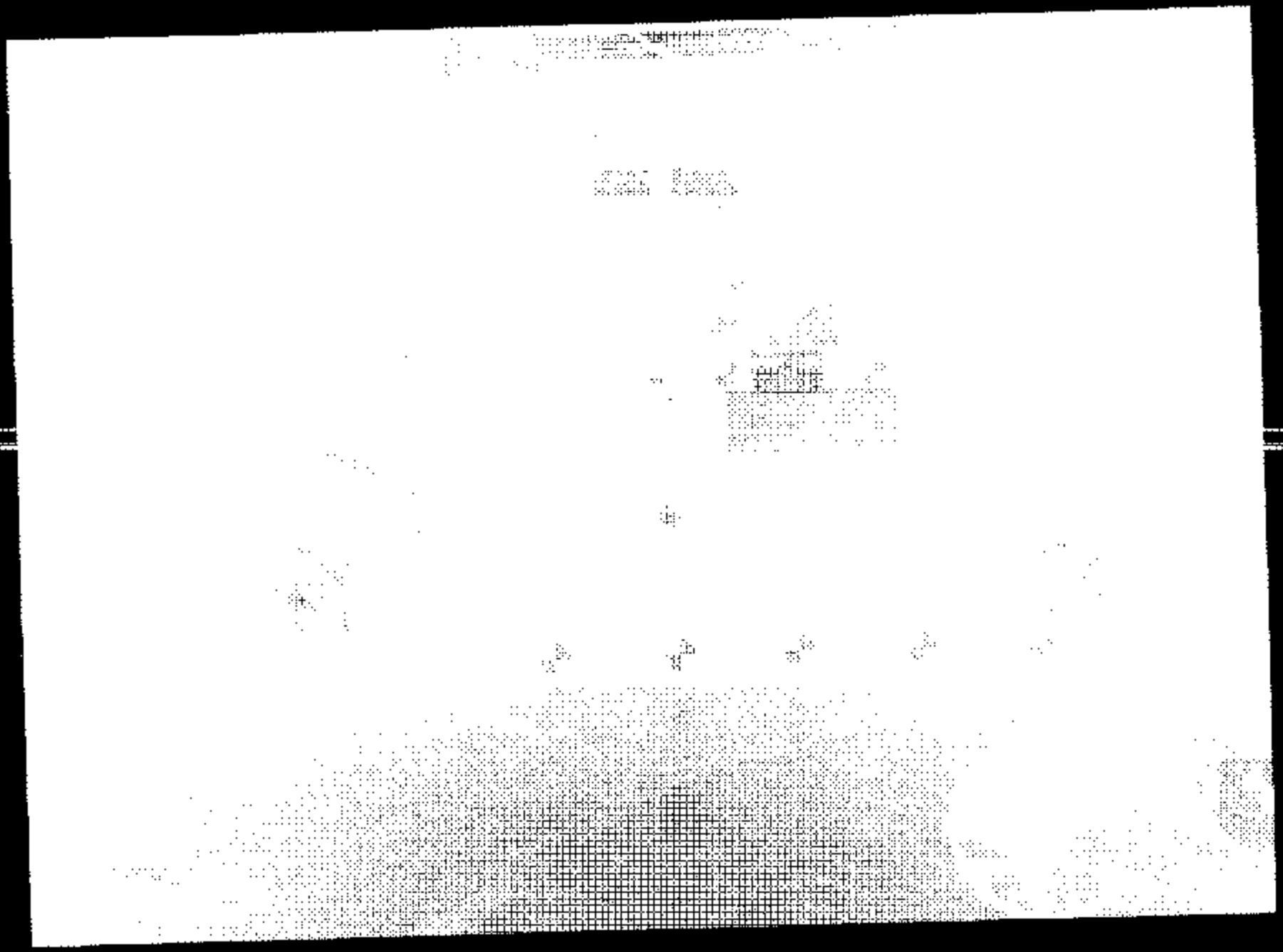
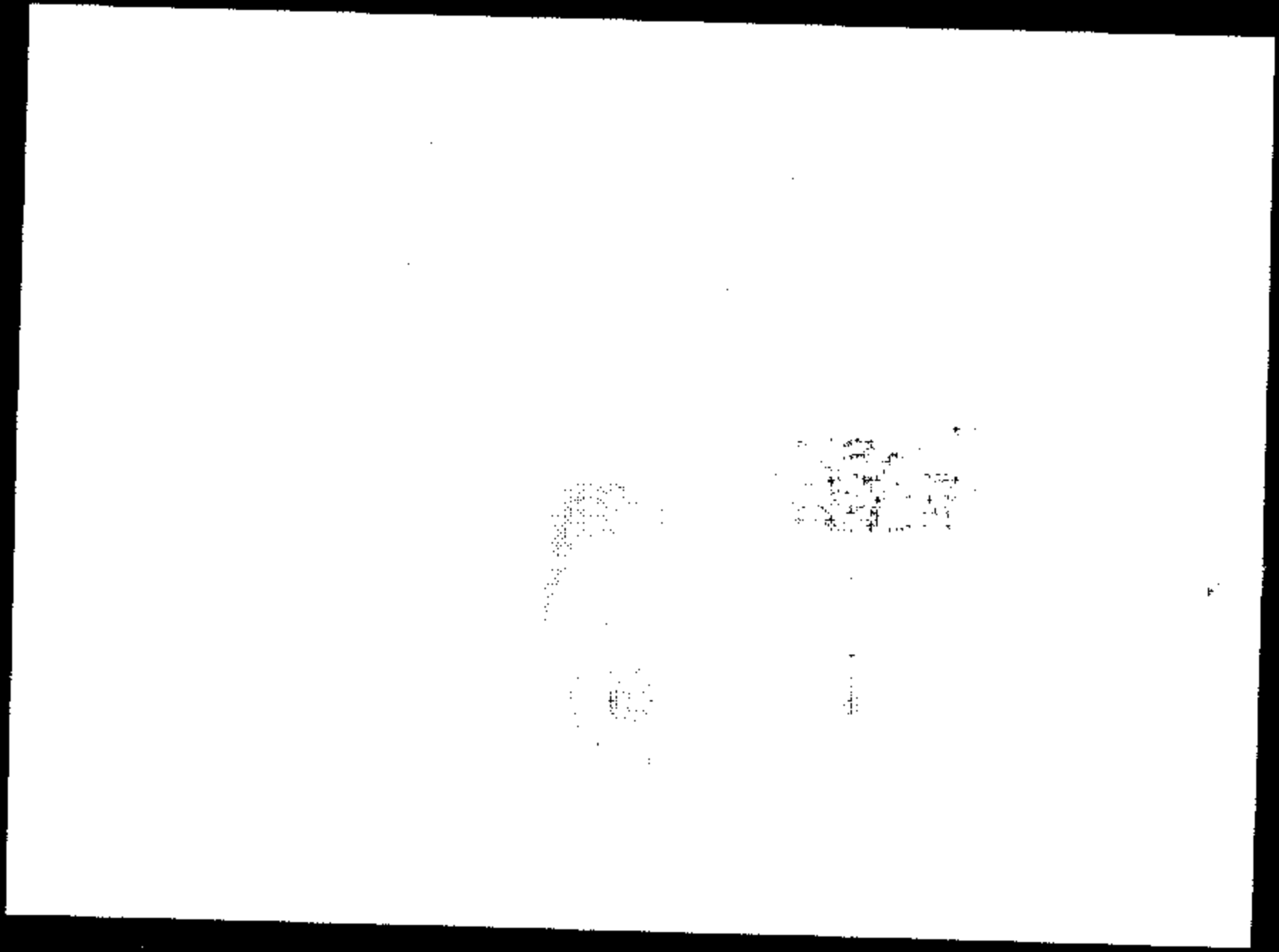


Post-Test Right Side View of Test Vehicle

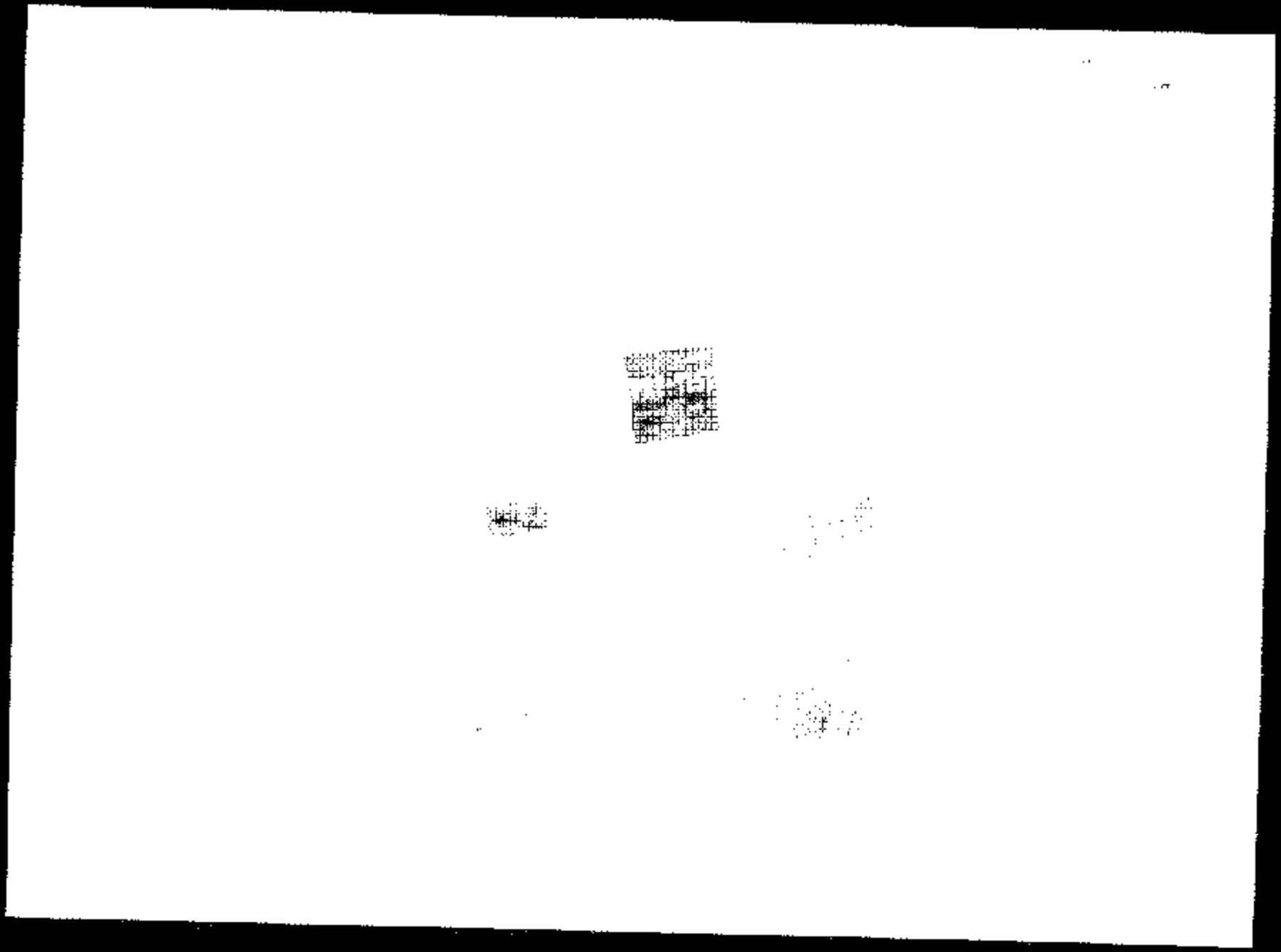


Pre-Test Right Front Three-Quarter View of Test Vehicle

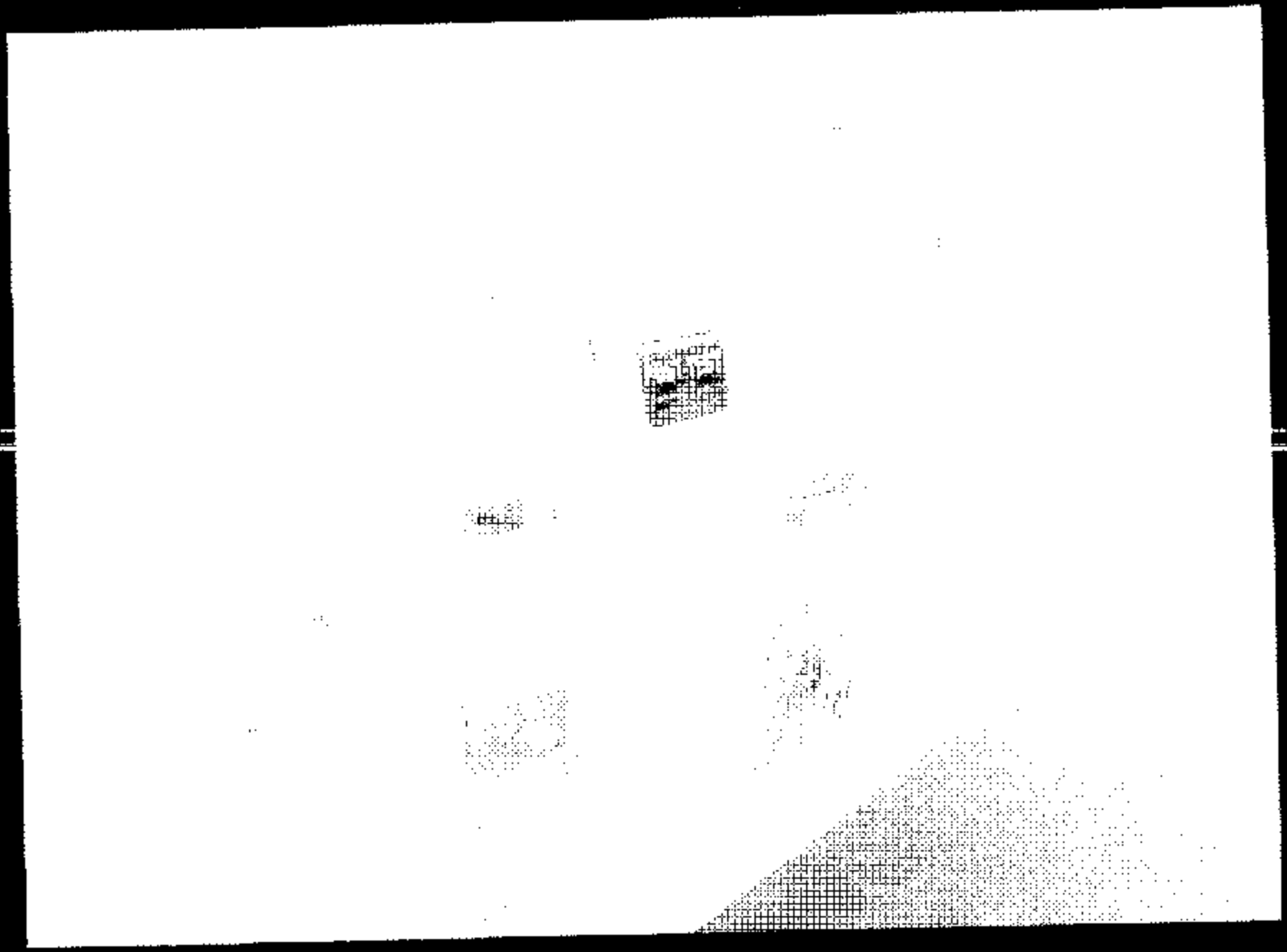
Post-Test Right Front Three-Quarter View of Test Vehicle

Pre-Test Left Front Three-Quarter View of Test Vehicle

Post-Test Left Front Three-Quarter View of Test Vehicle



Pre-Test Right Rear Three-Quarter View of Test Vehicle



Post-Test Right Rear Three-Quarter View of Test Vehicle

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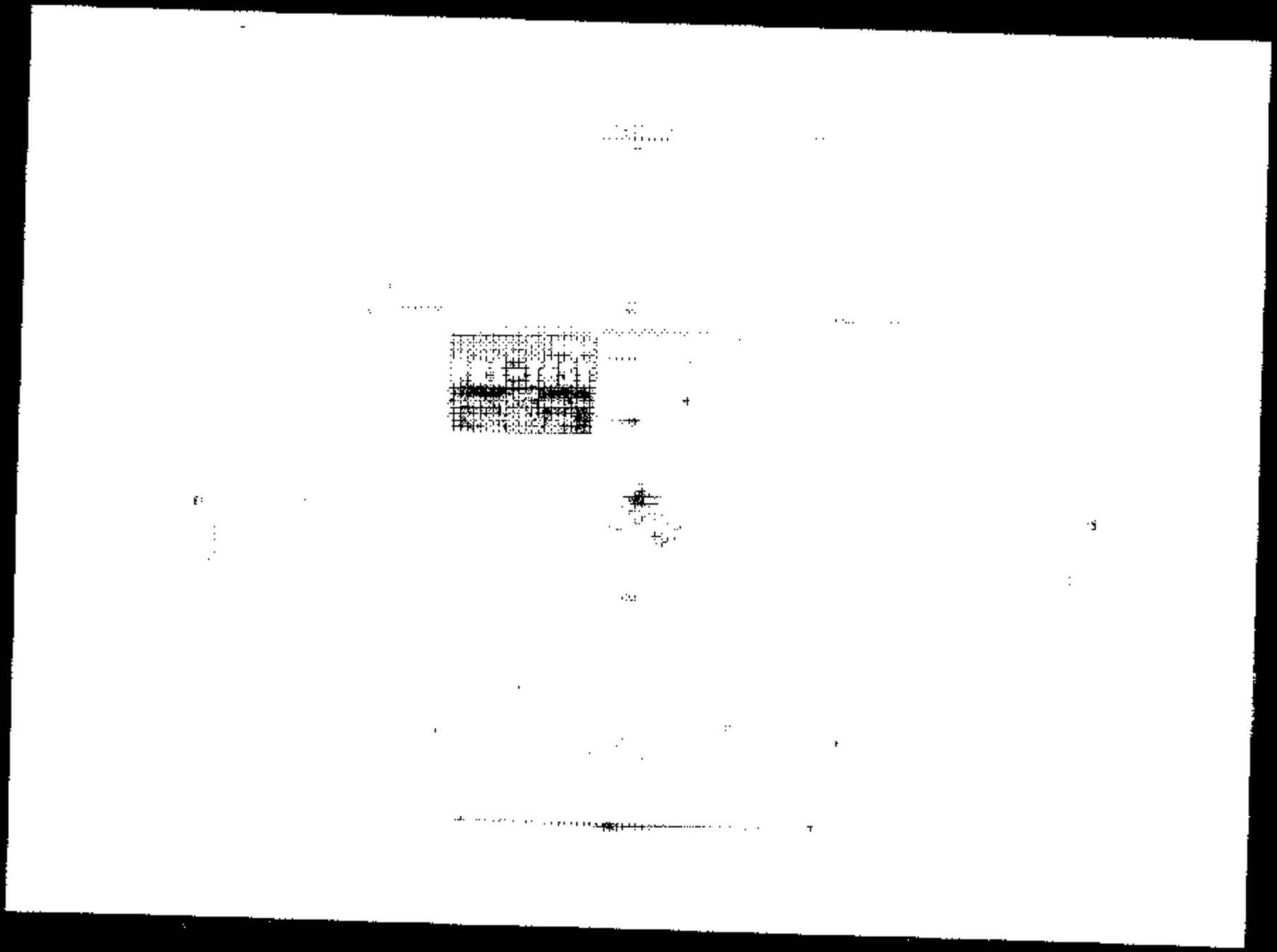
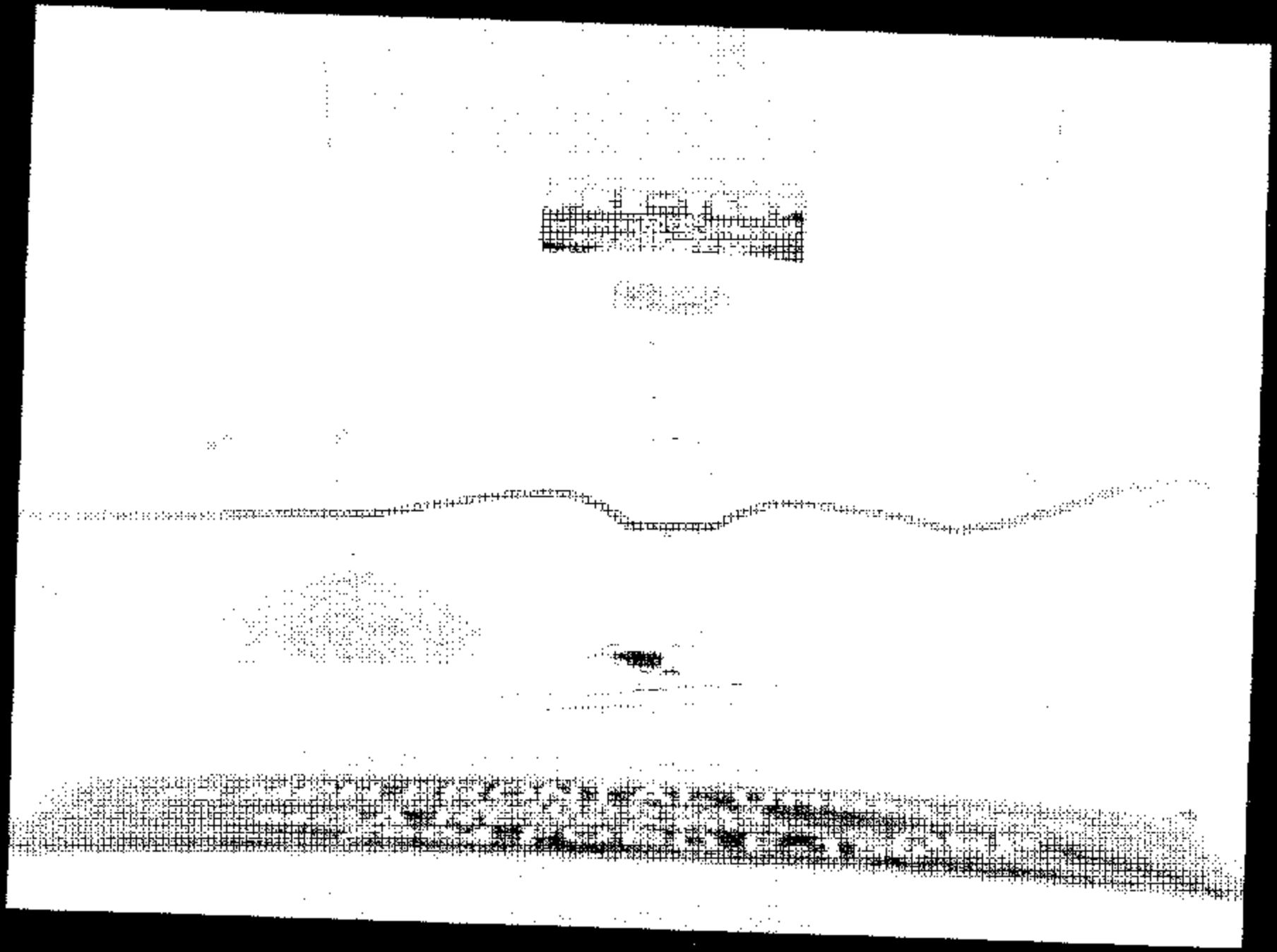
Post-Test Left Rear Three-Quarter View of Test Vehicle

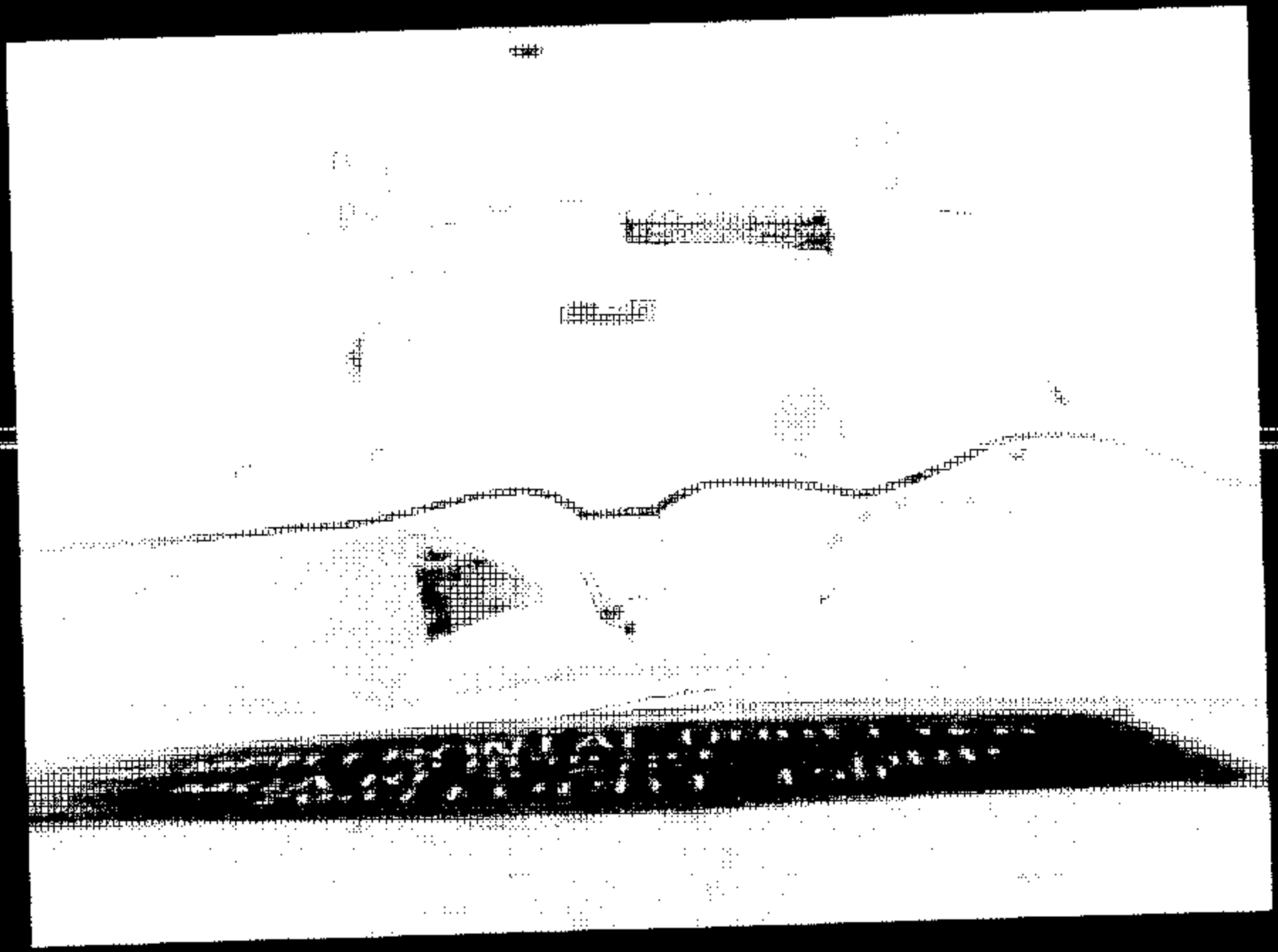


Pre-Test Rear View of Test Vehicle

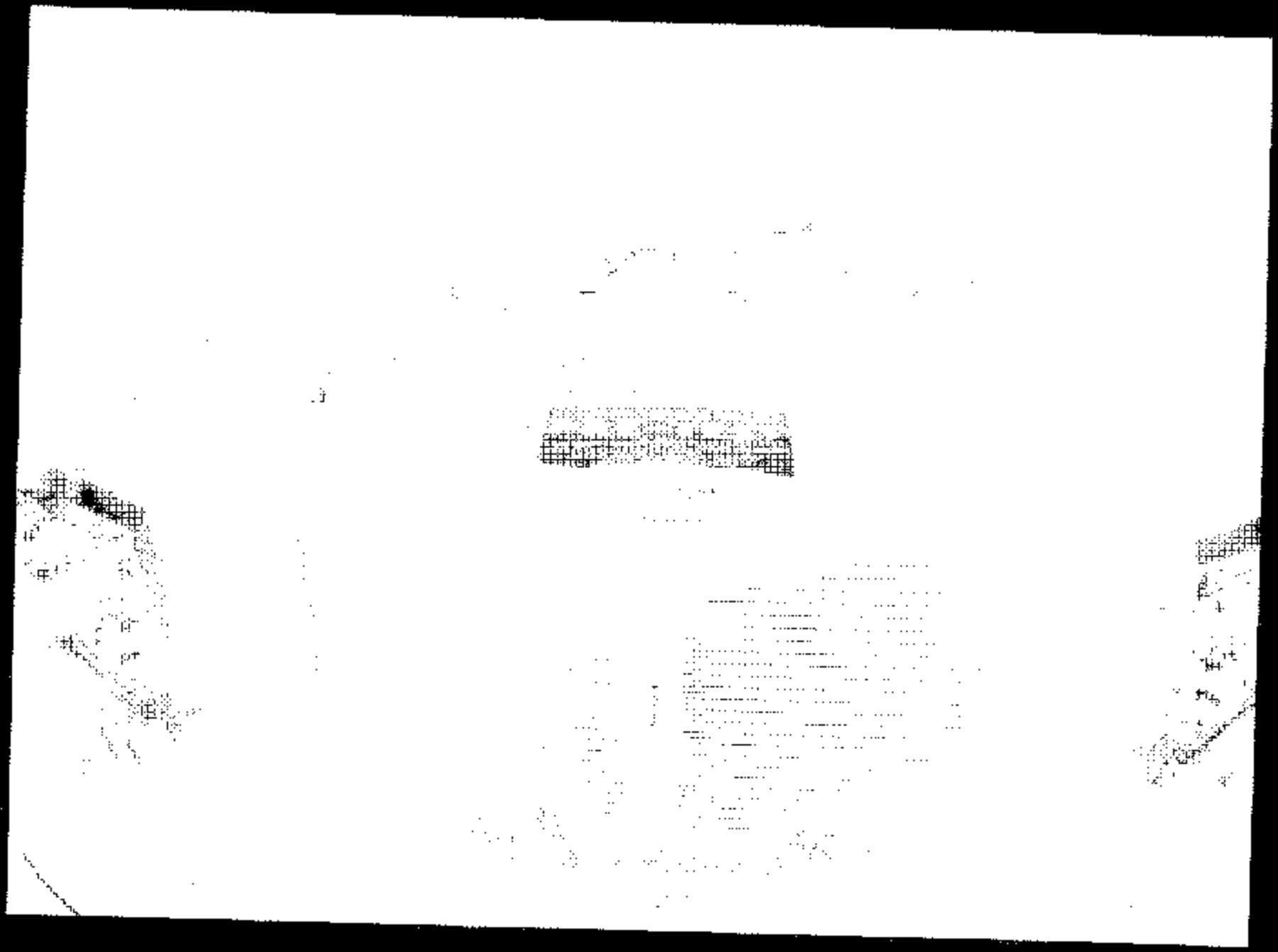
Post-Test Rear View of Test Vehicle



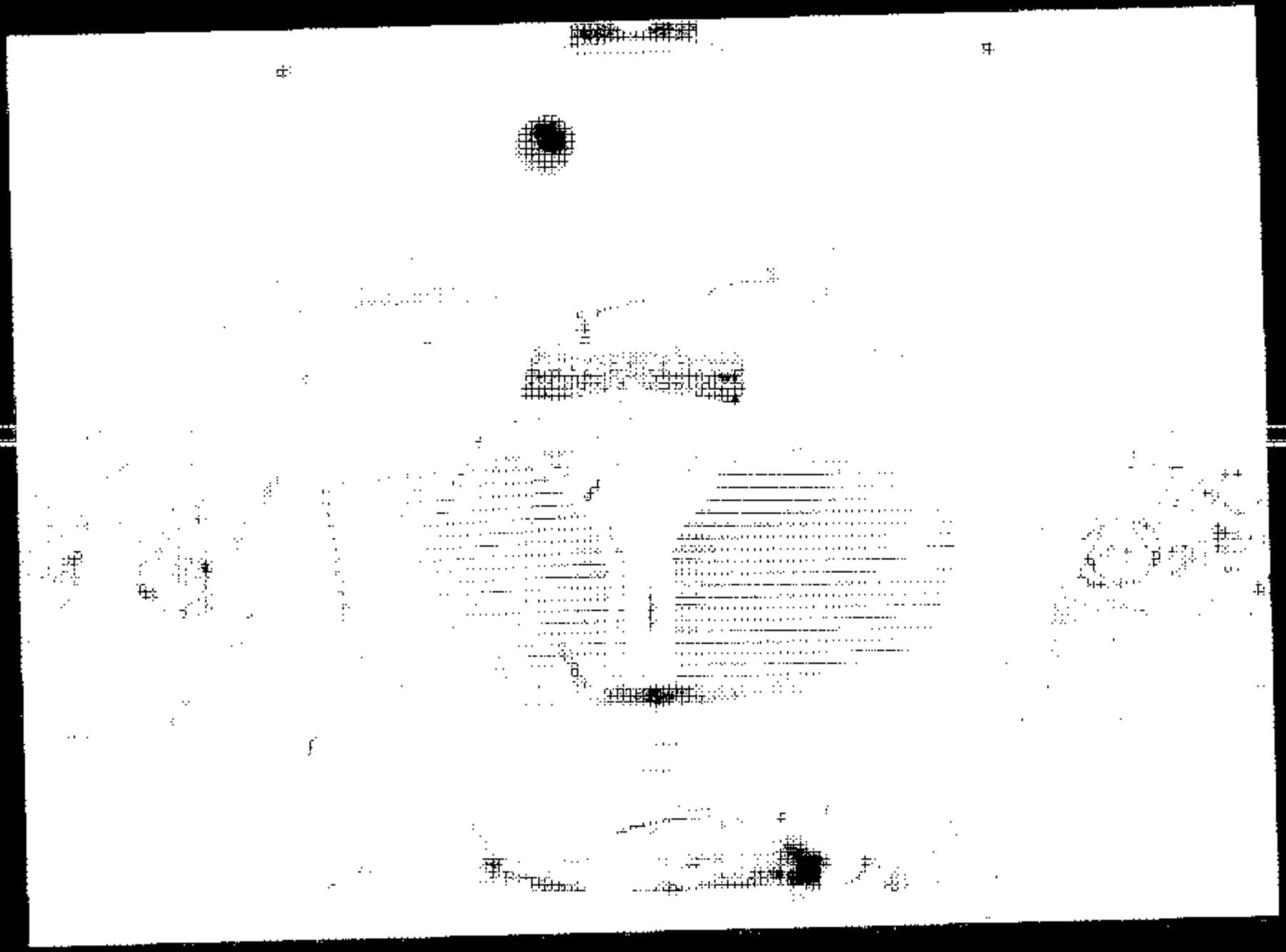
Pre-Test Windshield View



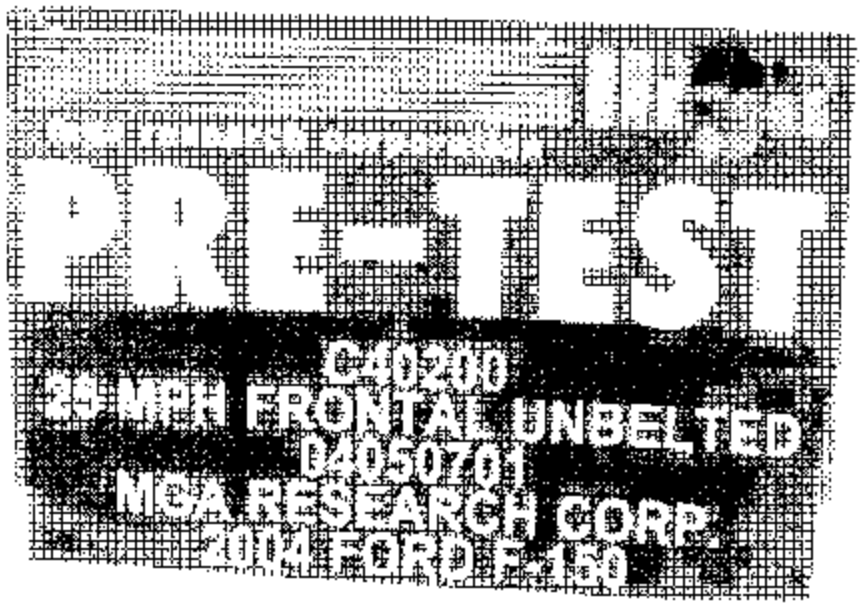
Post-Test Windshield View



Pre-Test Engine Compartment View

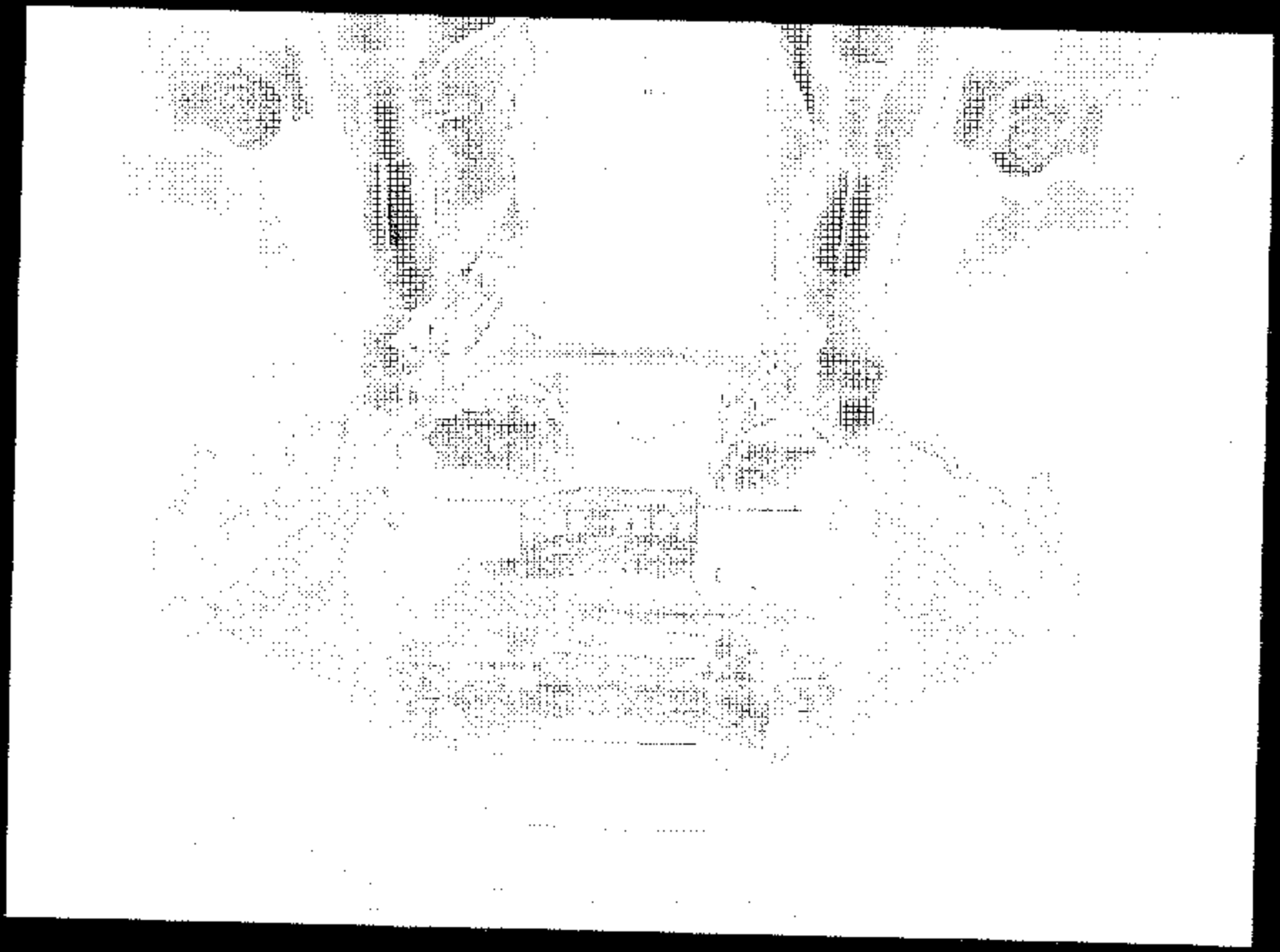


Post-Test Engine Compartment View

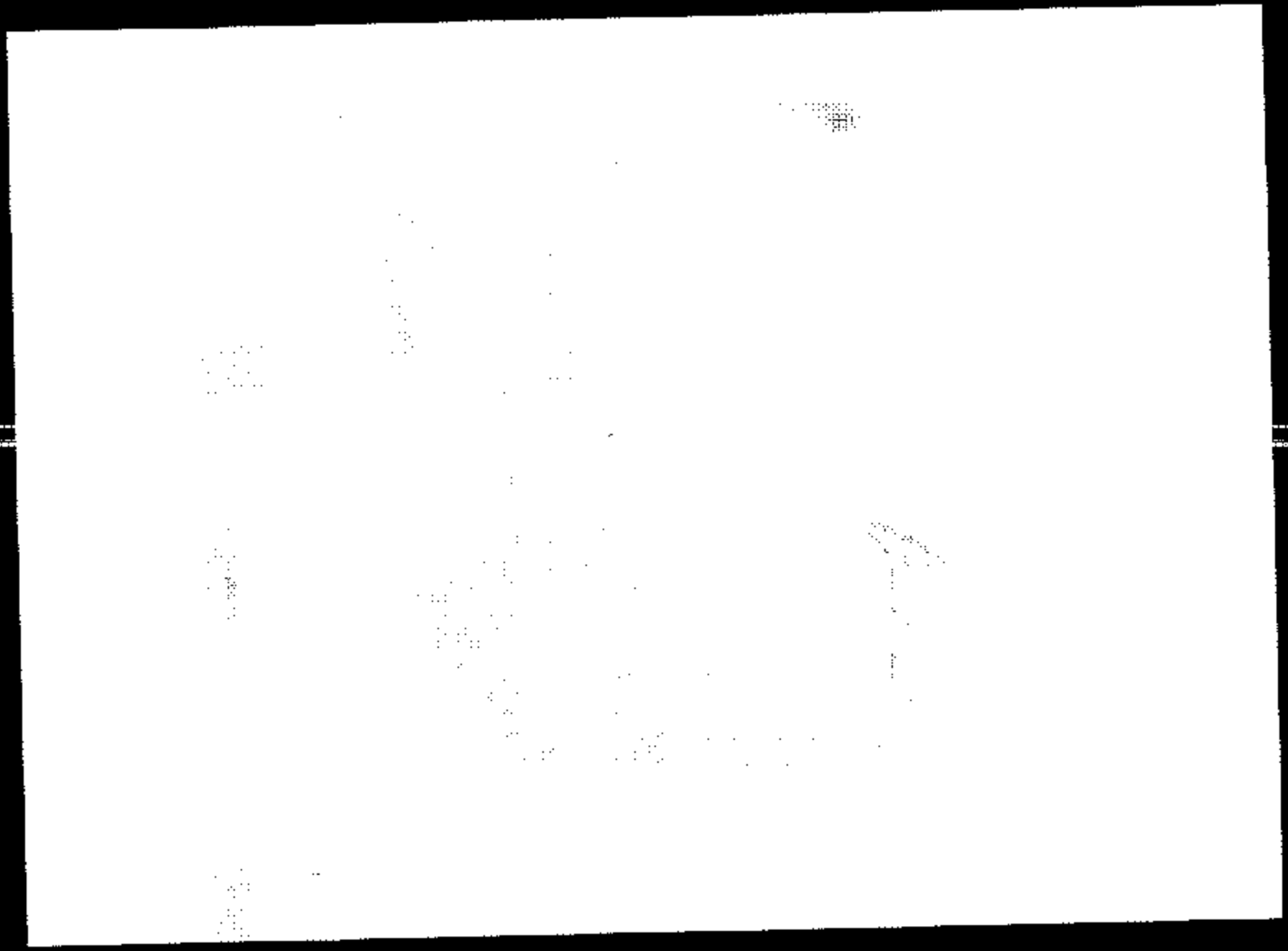


Pre-Test Fuel Filler Cap View

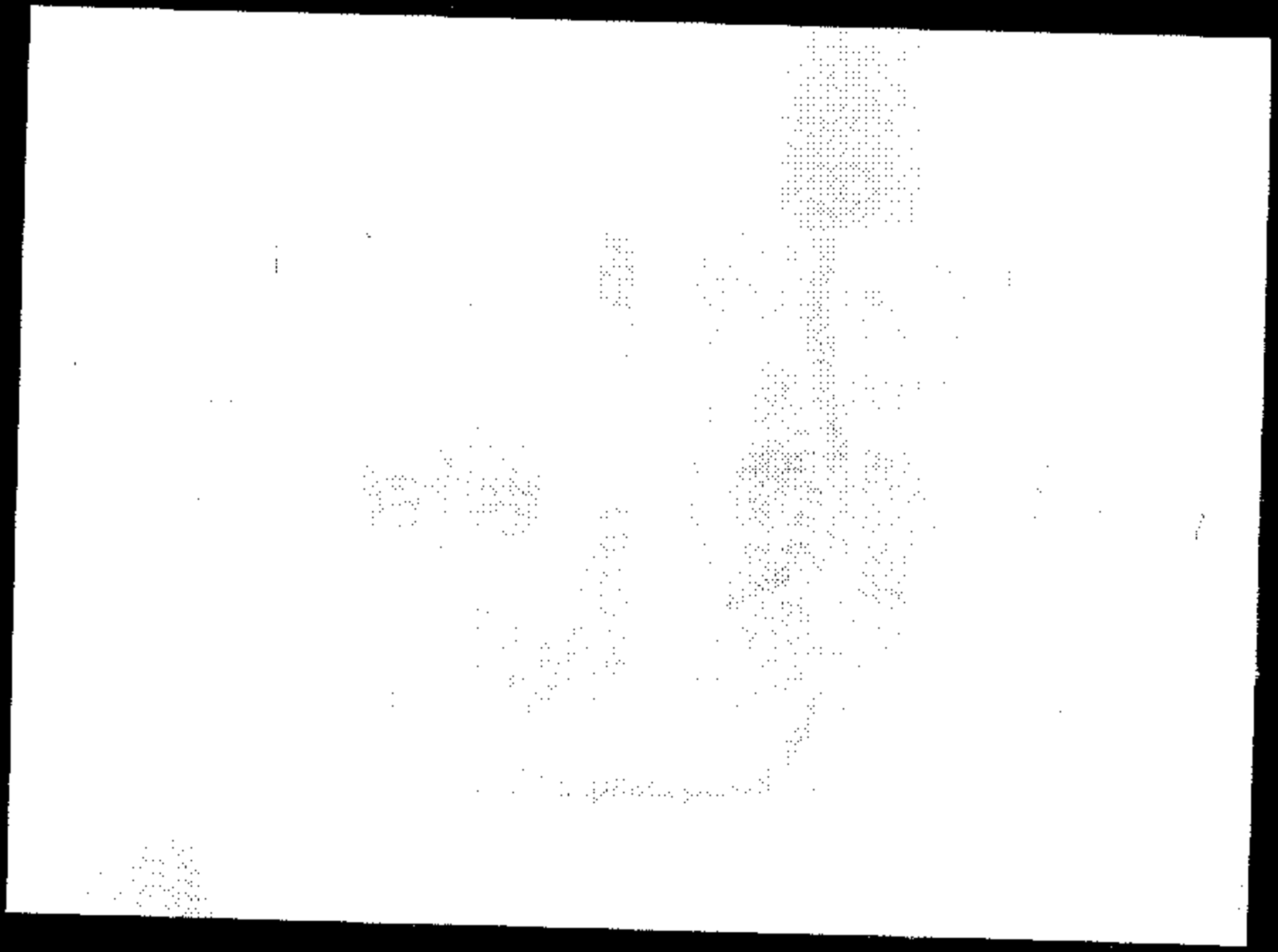
Post-Test Fuel Filler Cap View



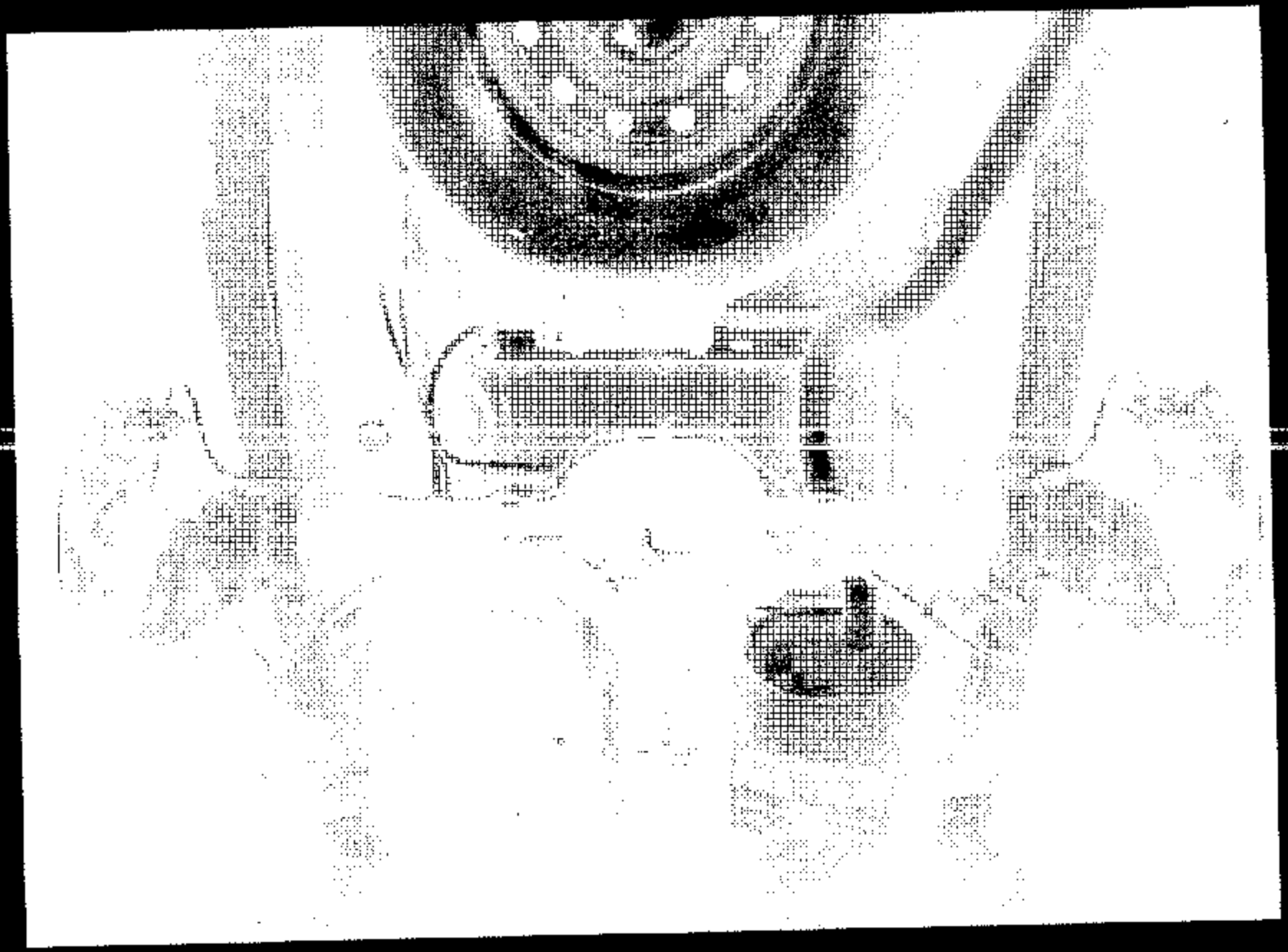
Pre-Test Front Underbody View



Post-Test Front Underbody View

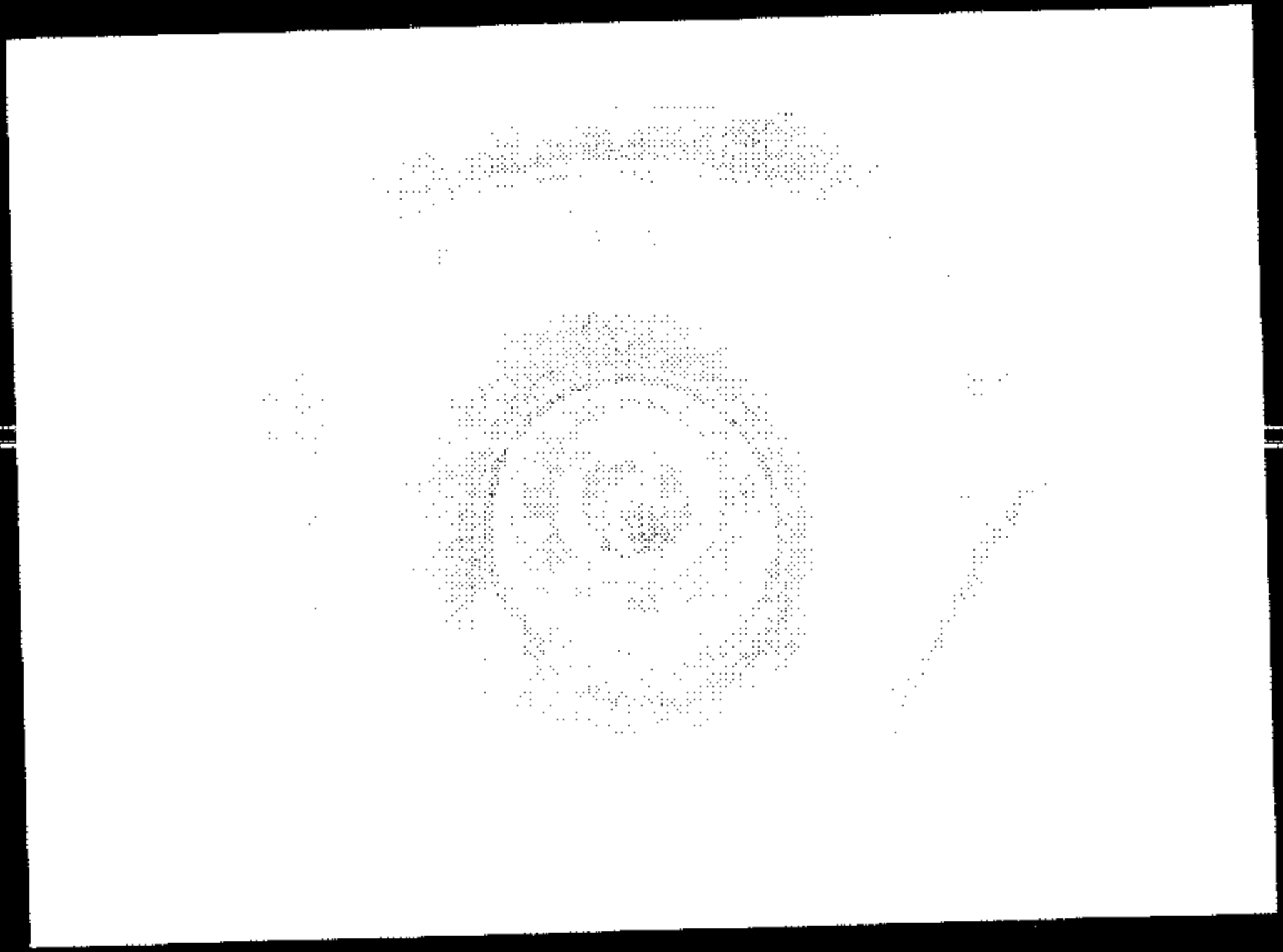


Pre-Test Mid Front Underbody



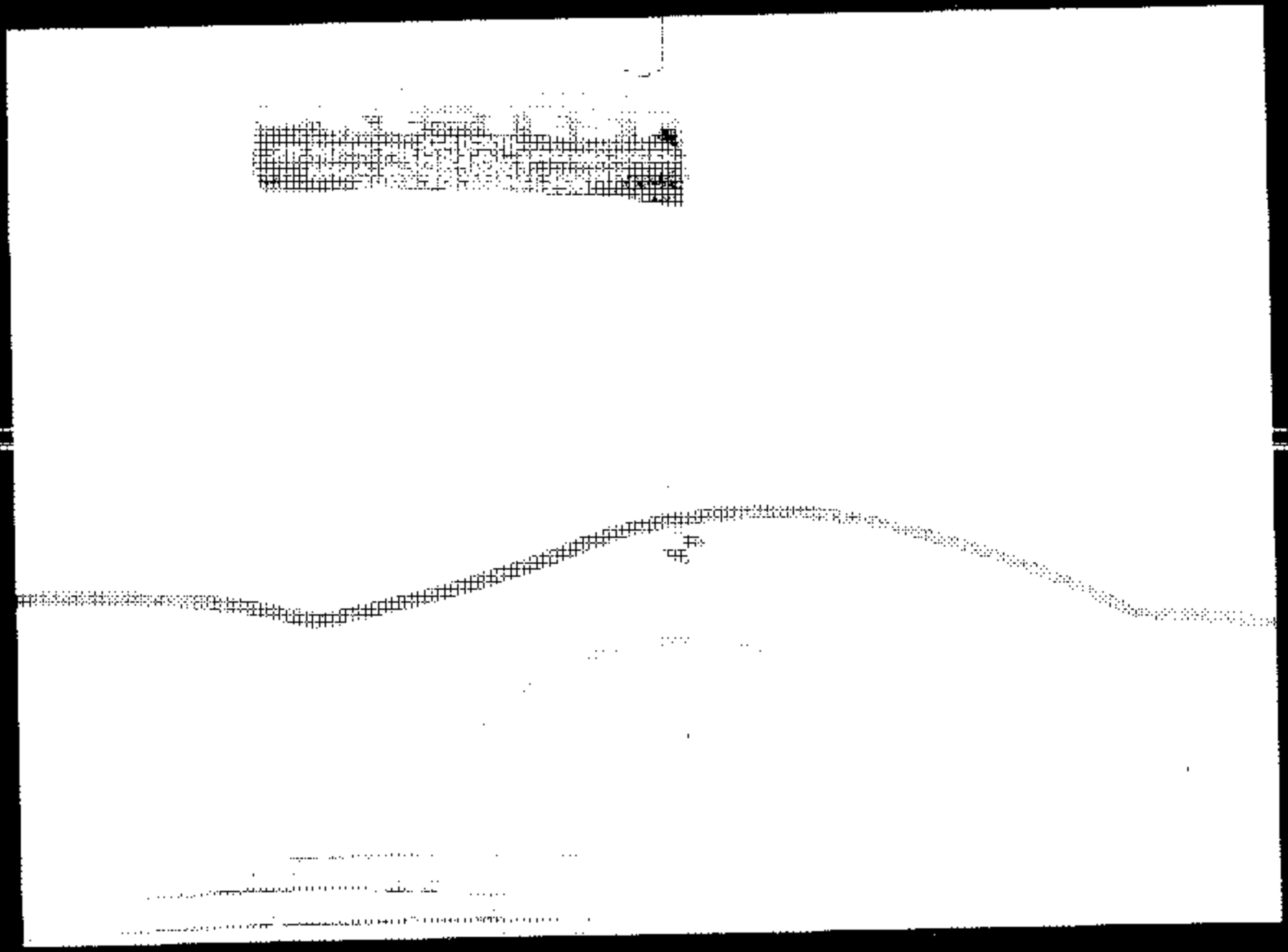
Pre-Test Mid Rear Underbody

Post-Test Mid Underbody

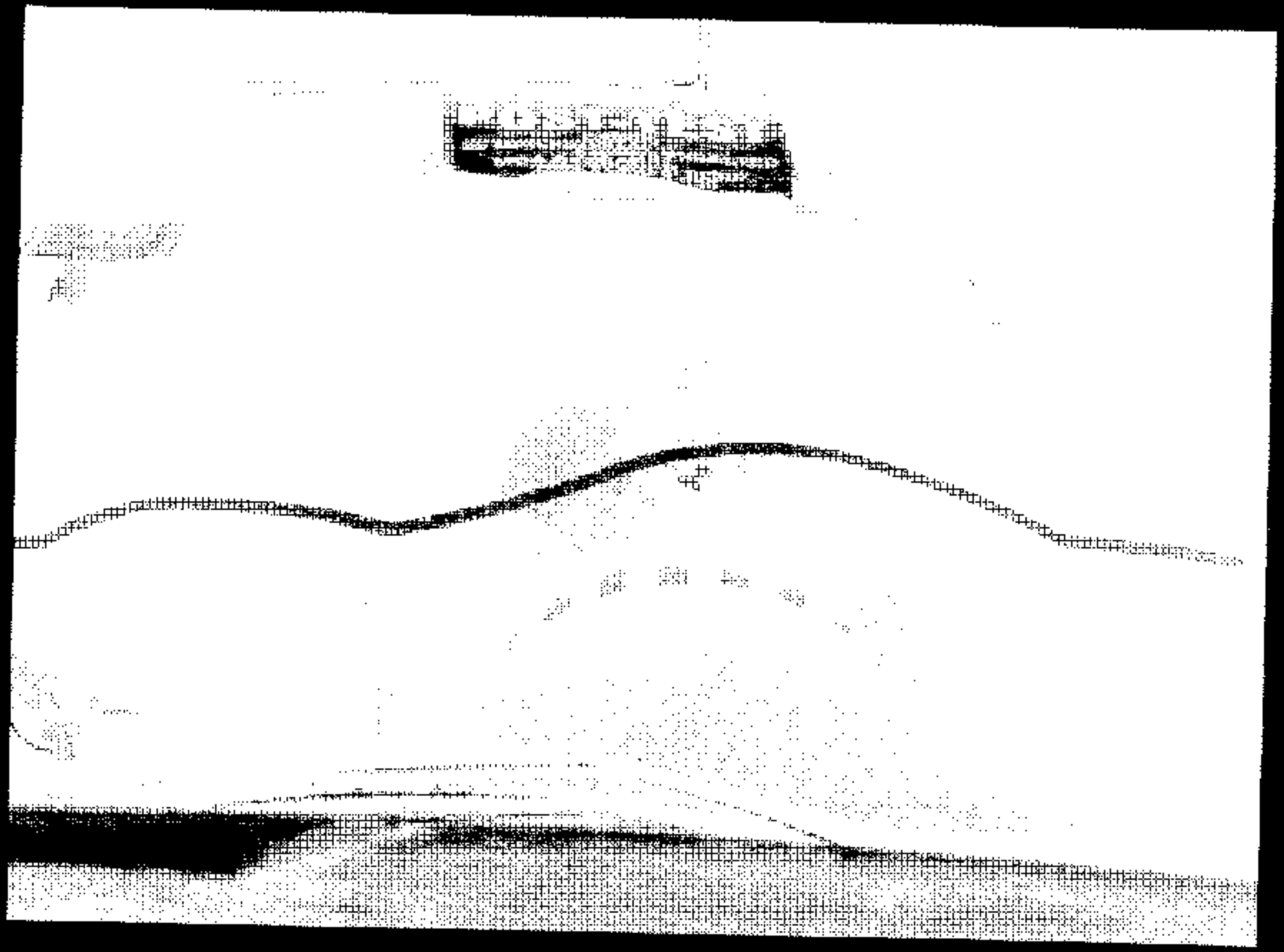


Pre-Test Rear Underbody View

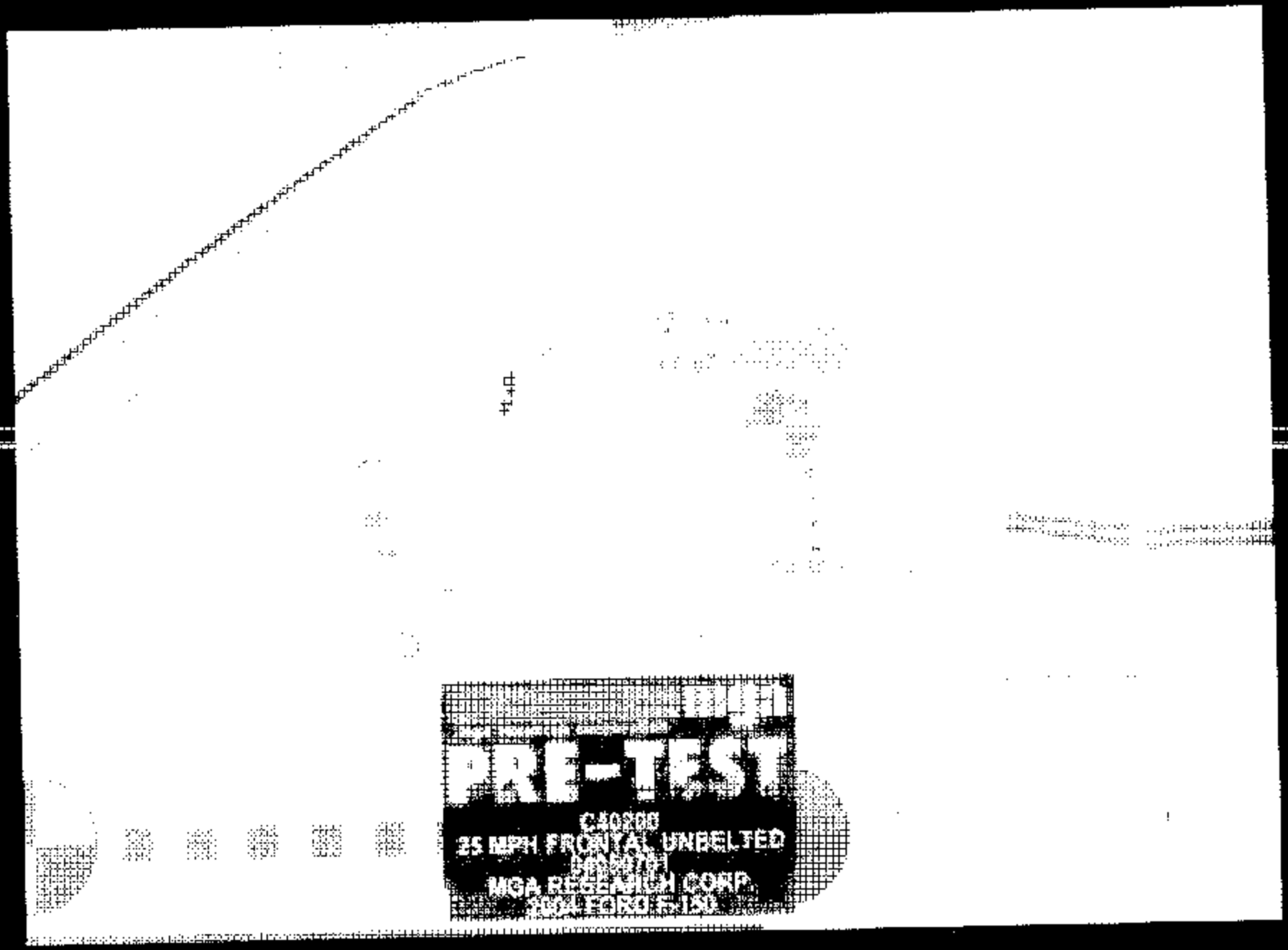
Post-Test Rear Underbody View



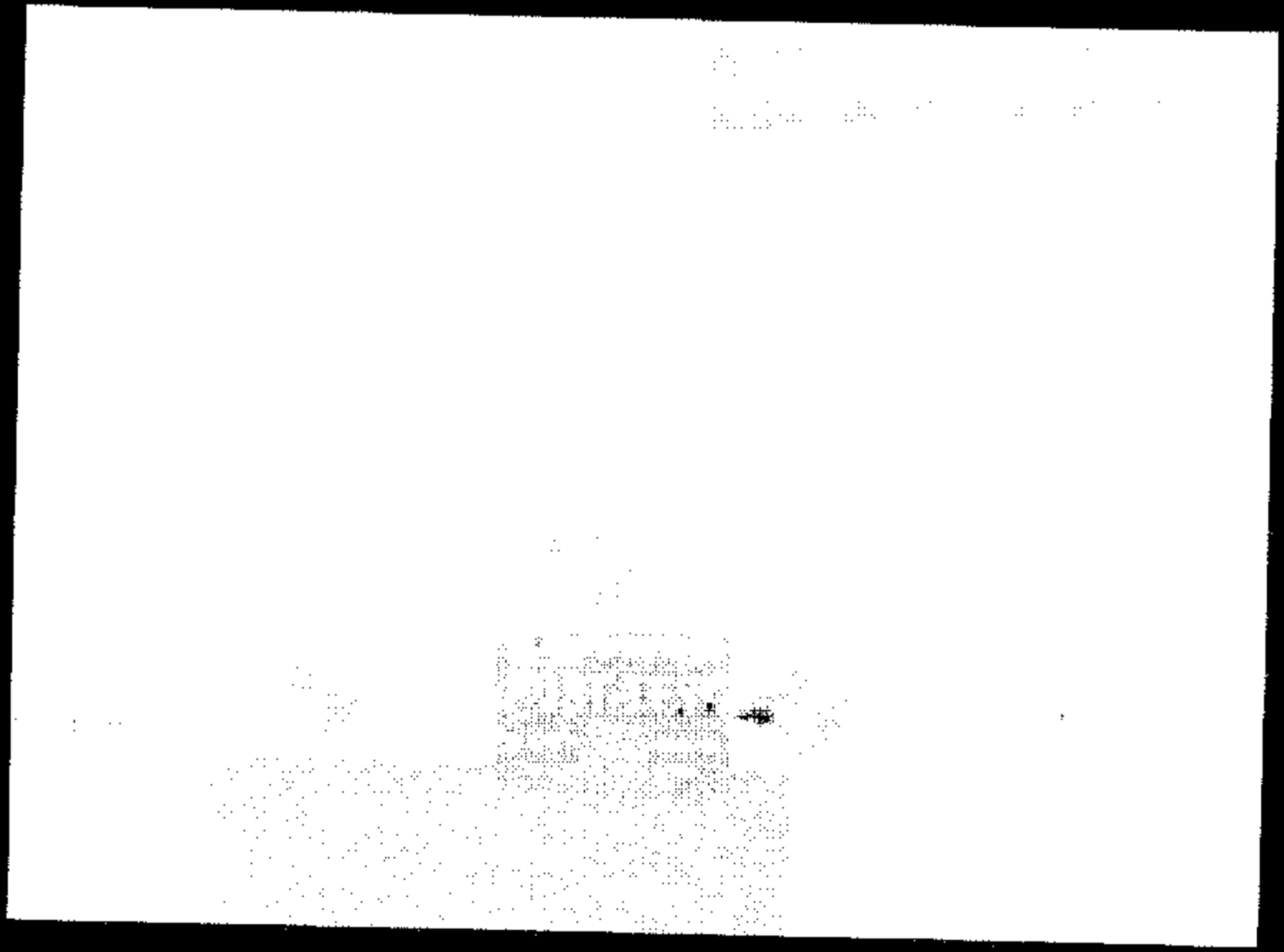
Pre-Test Driver Dummy Front View (head position)



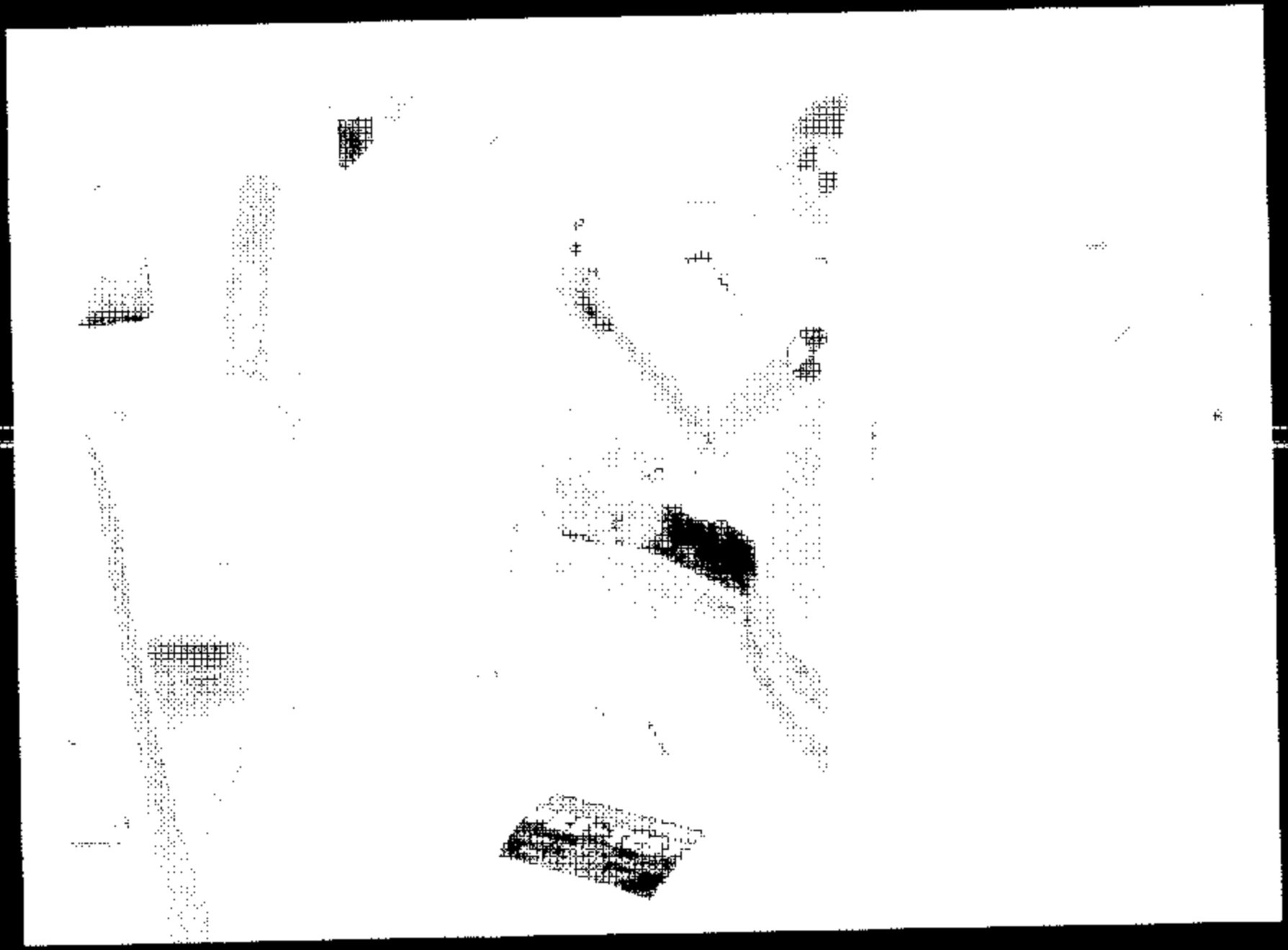
Post-Test Driver Dummy Front View (head position)



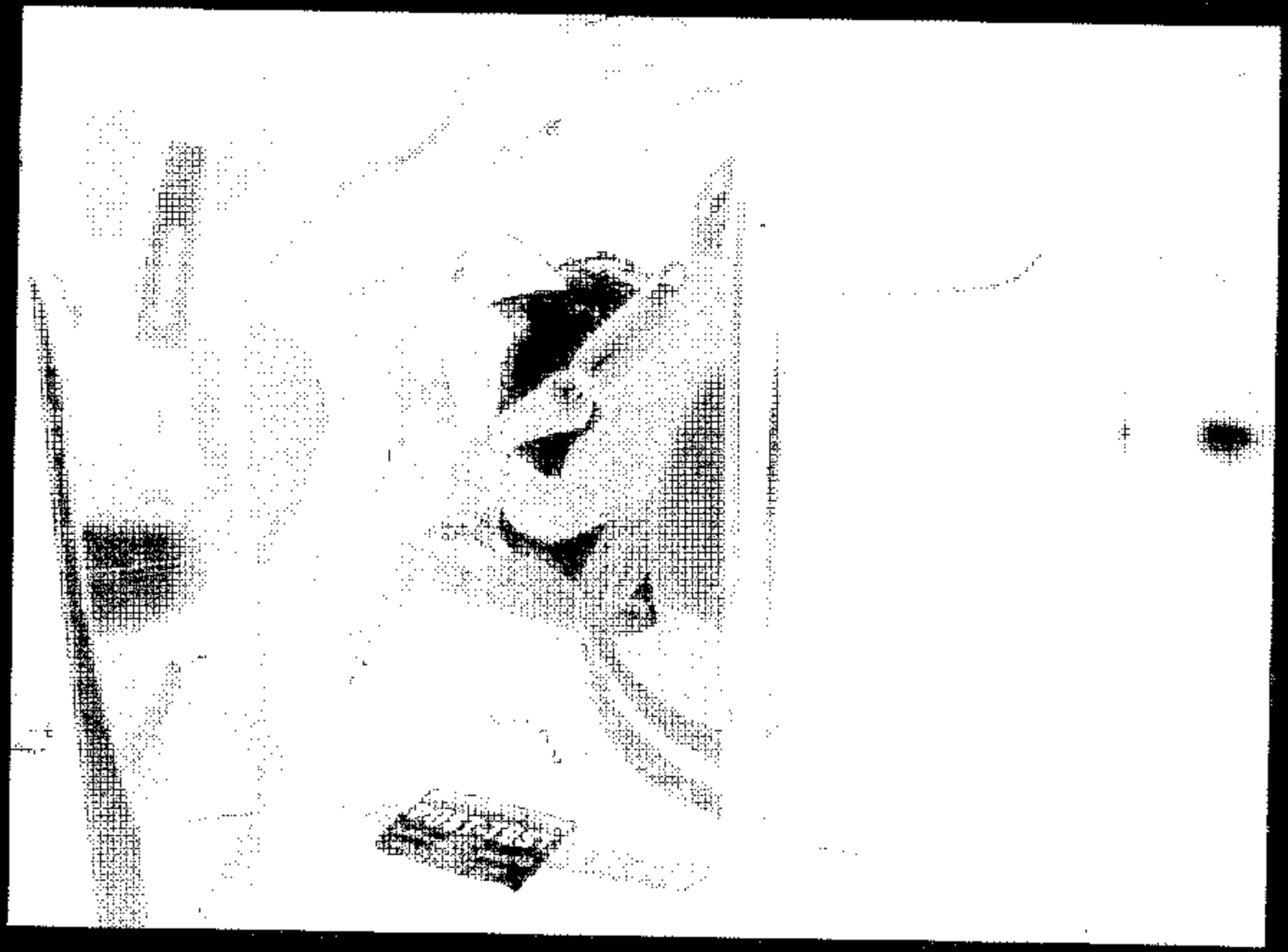
Pre-Test Driver Dummy Position Left Side View



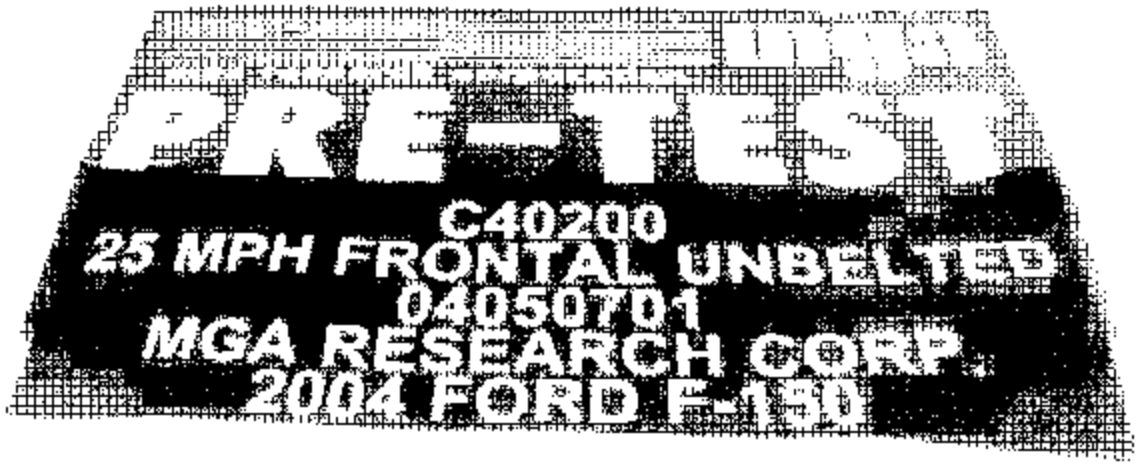
Post-Test Driver Dummy Position Left Side View



Pre-Test Driver Dummy Position Left Side View (Door Open)



Post-Test Driver Dummy Position Left Side View (Door Open)



Pre-Test Driver Dummy Seat Position

Post-Test Driver Dummy Seat Position

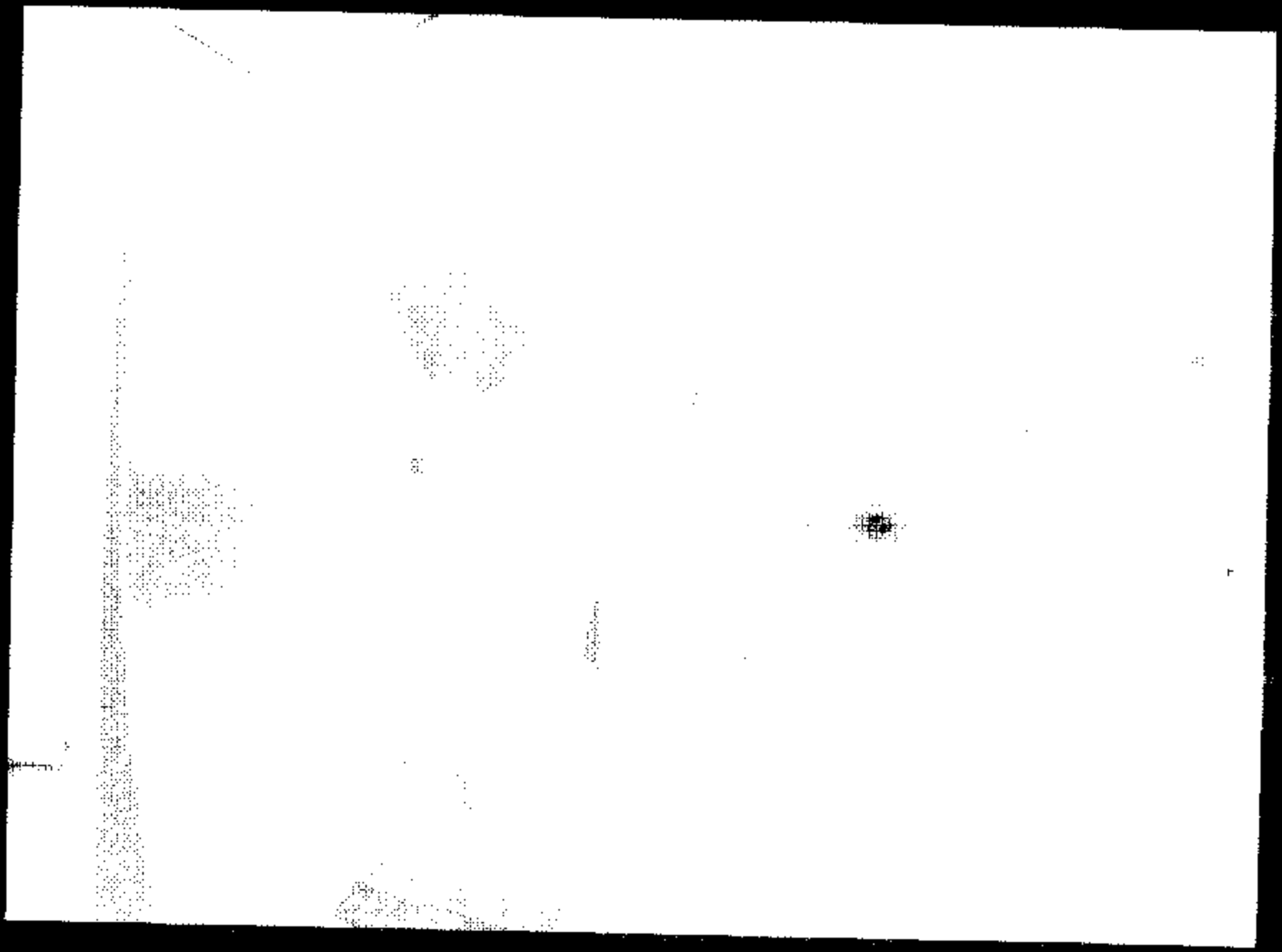
Pre-Test Driver Dummy Feet Position

Post-Test Driver Dummy Feet Position

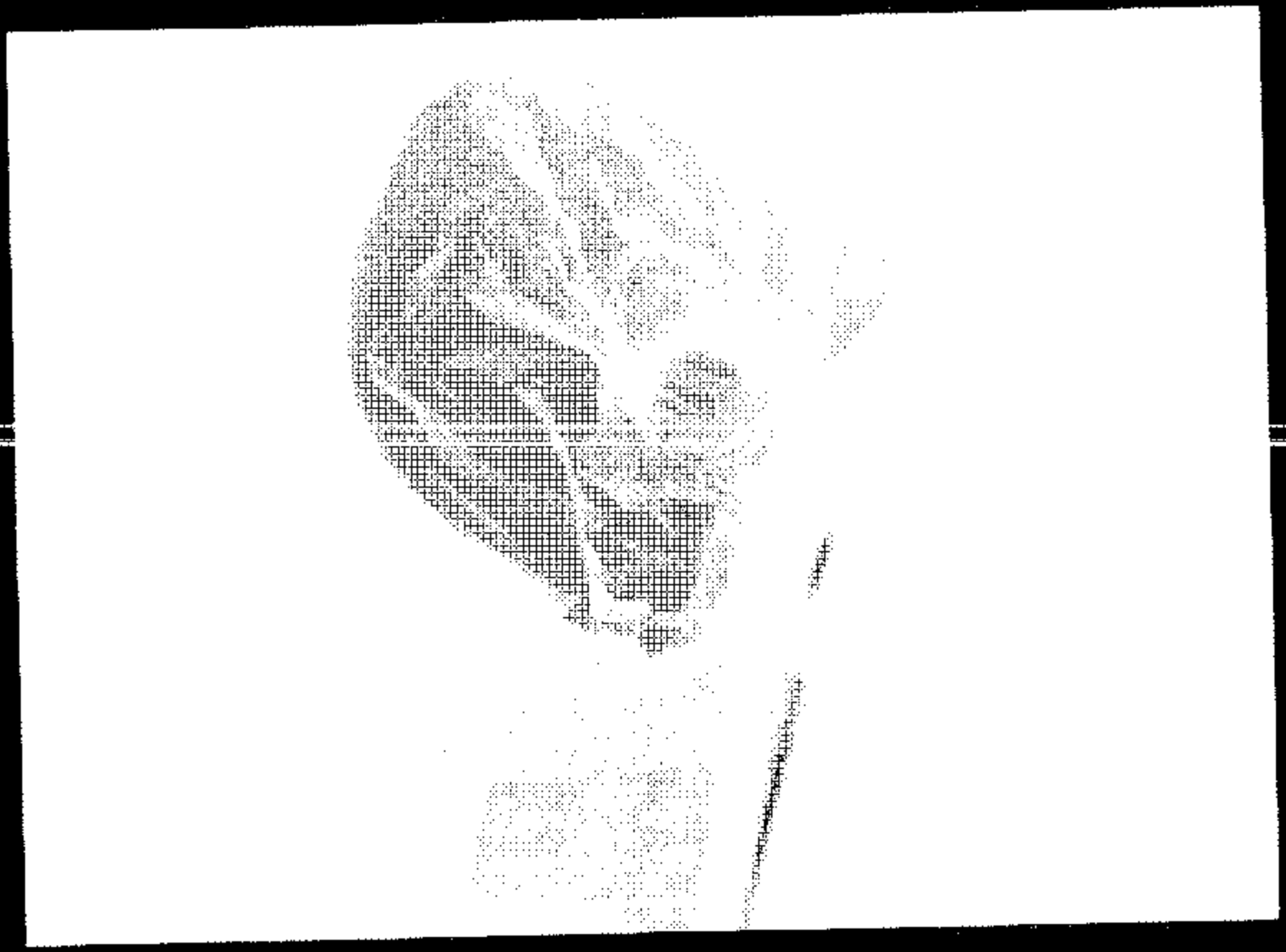
Pre-Test Driver Side Knee Bolster View

Post-Test Driver Side Knee Bolster View

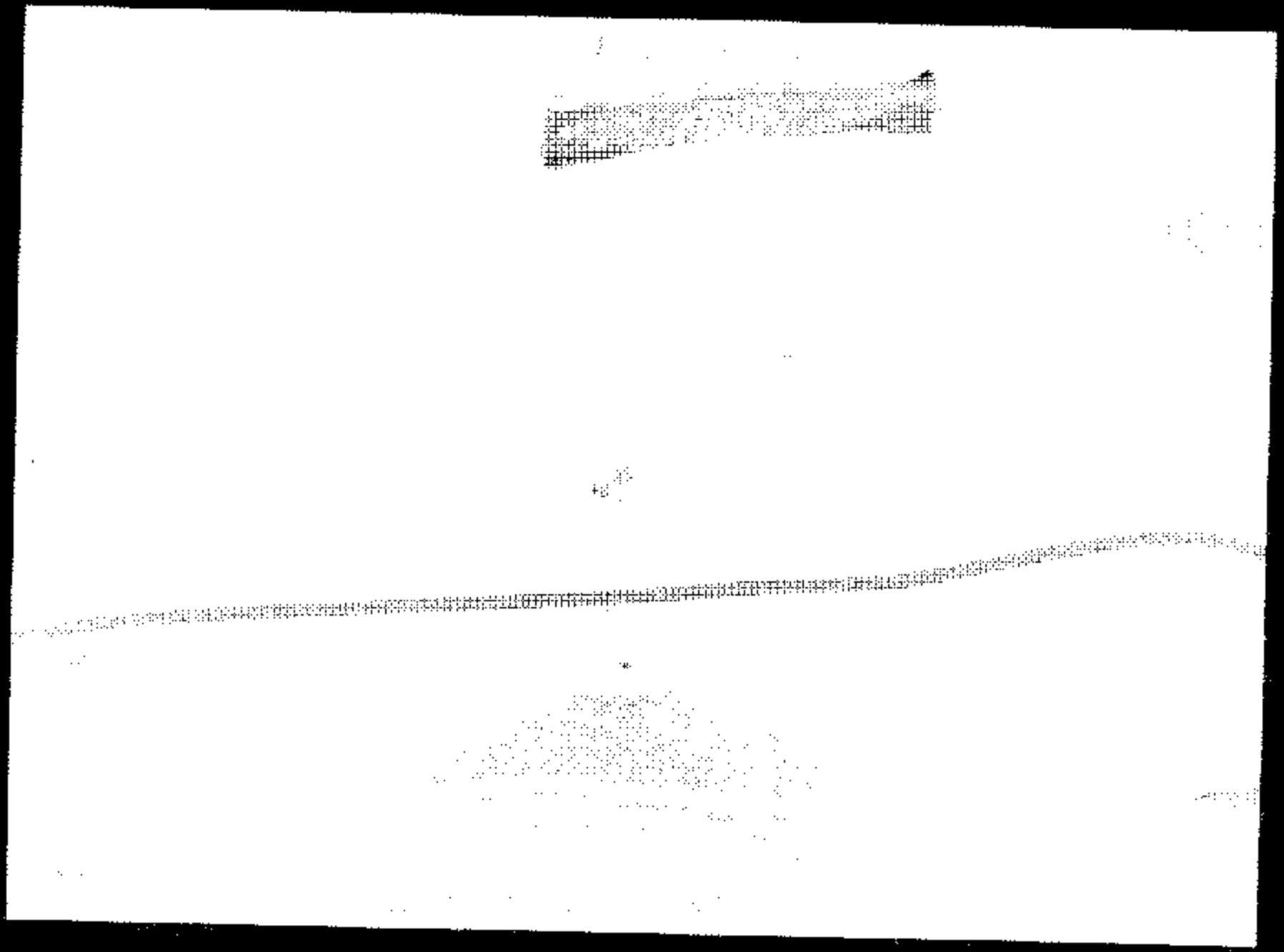
Post-Test Driver Dummy Head Contact



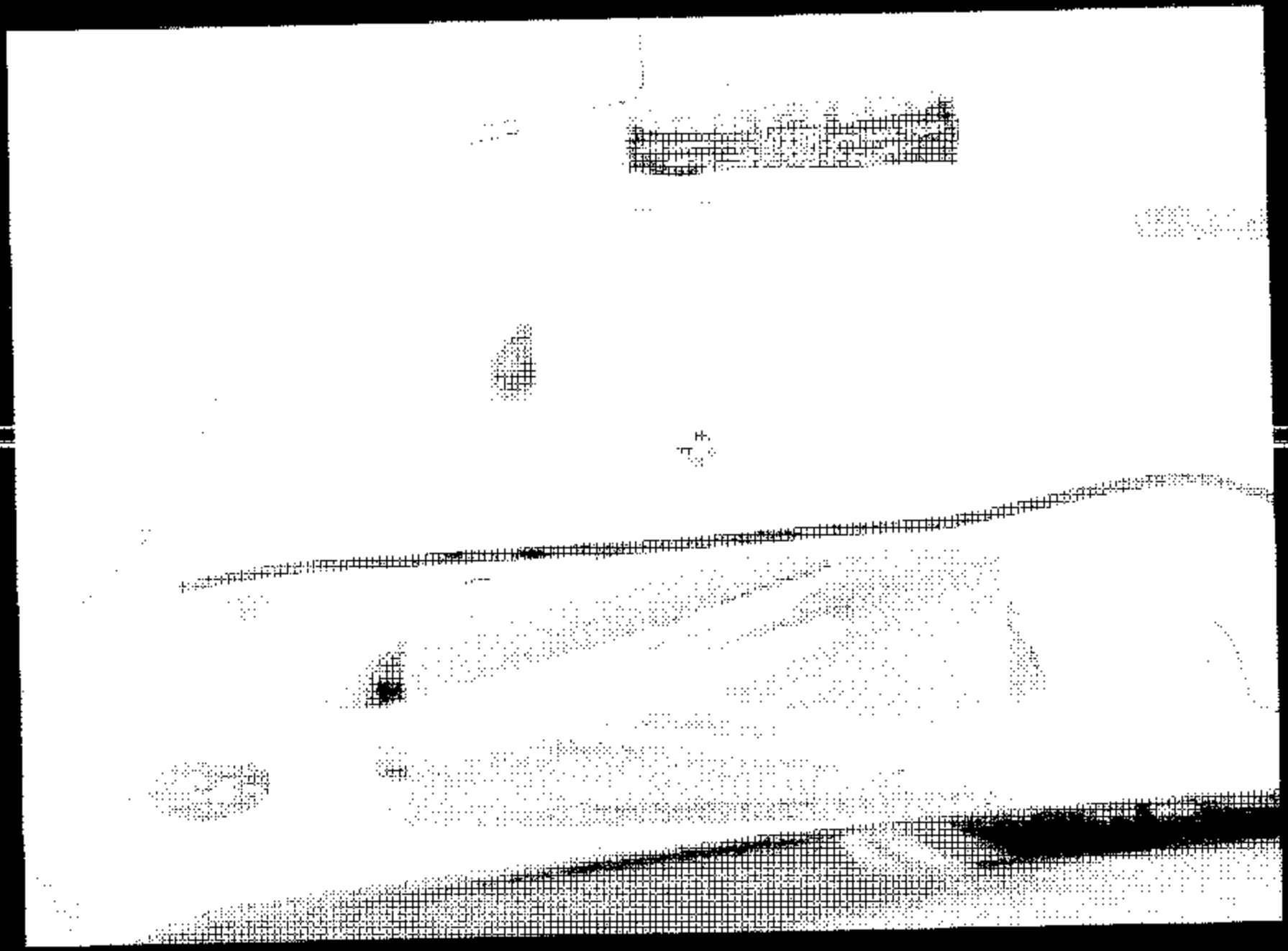
Post-Test Driver Dummy Knee Contact



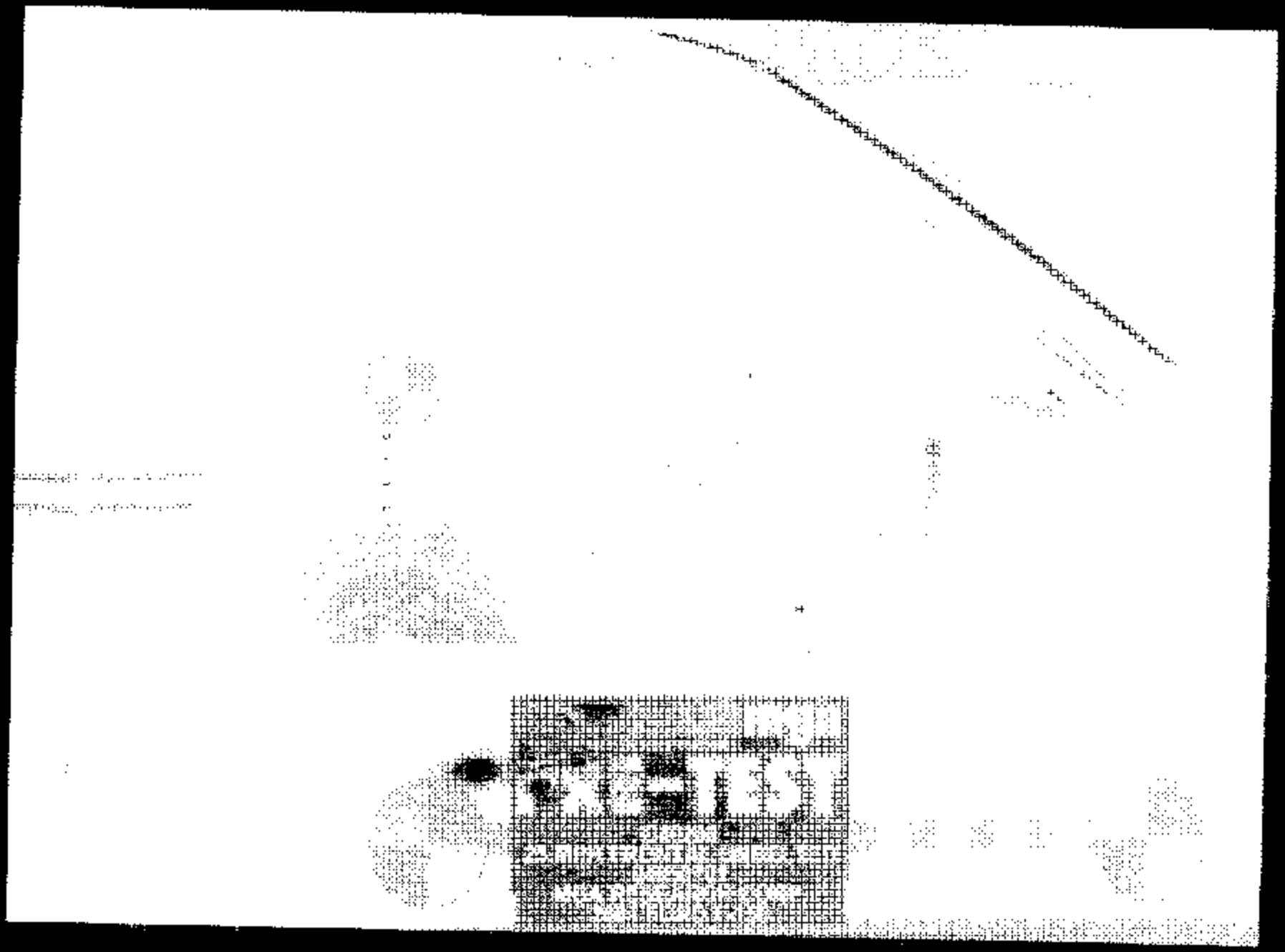
Post-Test Driver Dummy Airbag Contact



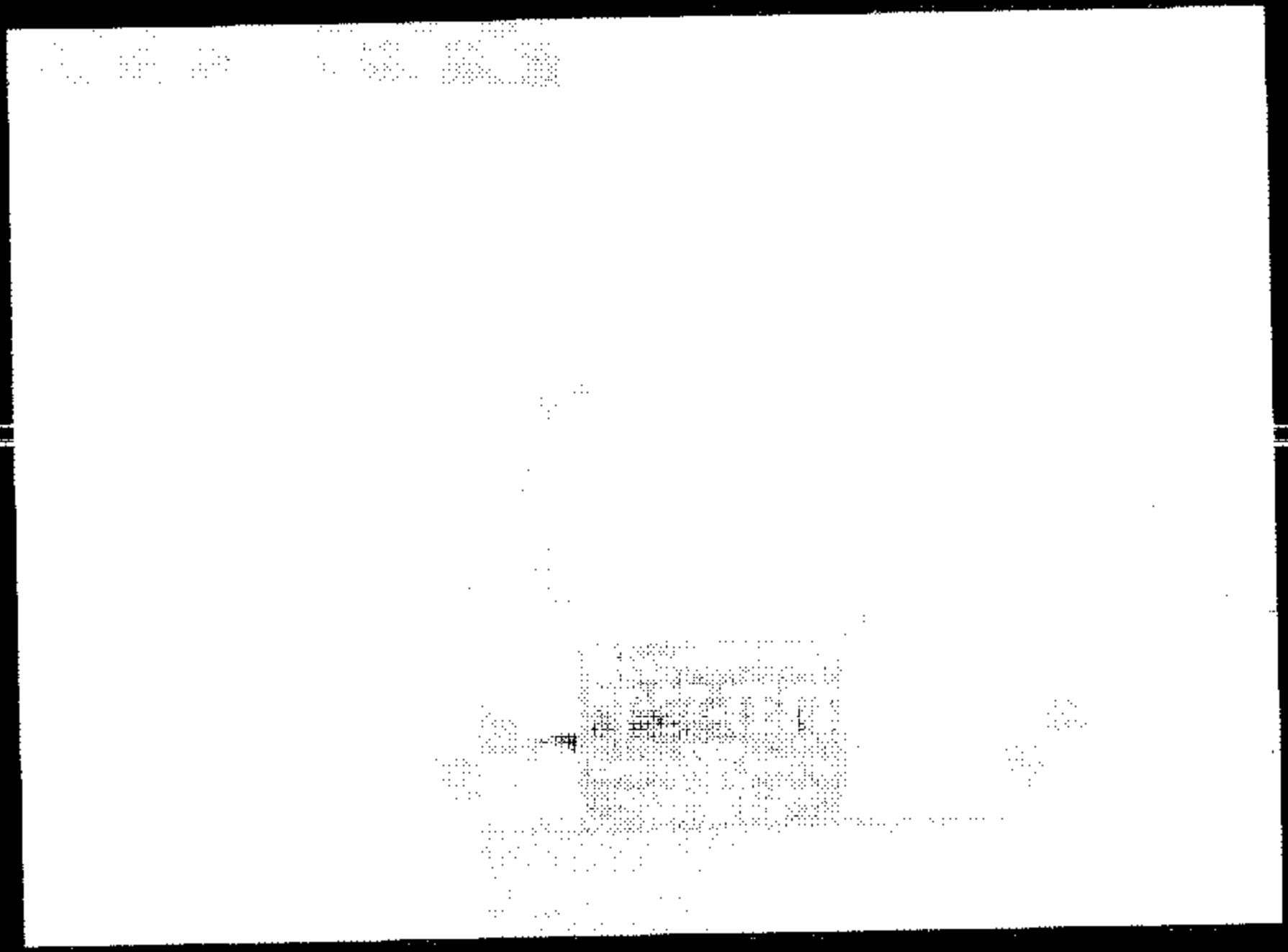
Pre-Test Passenger Dummy Front View (head position)



Post-Test Passenger Dummy Front View (head position)

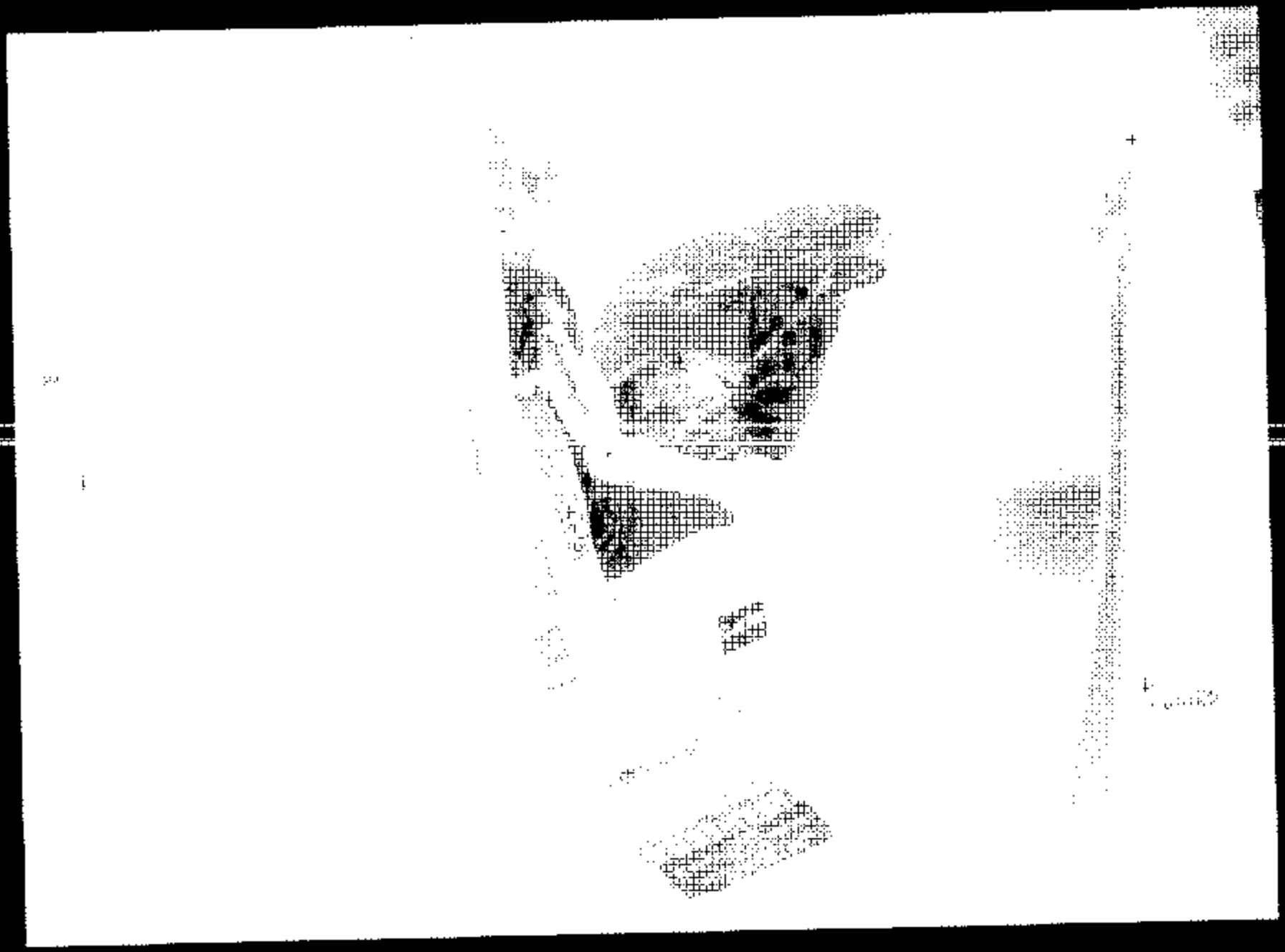


Pre-Test Passenger Dummy Position Right Side View

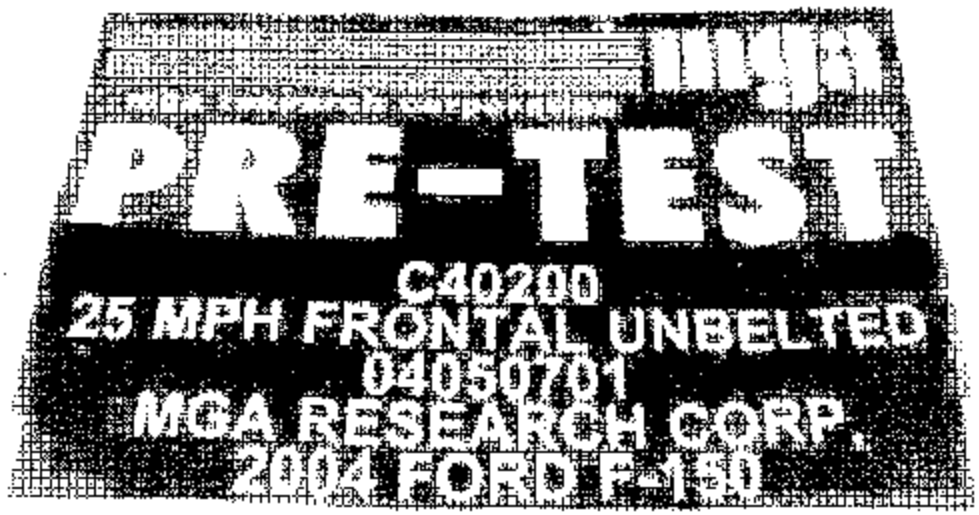


Post-Test Passenger Dummy Position Right Side View

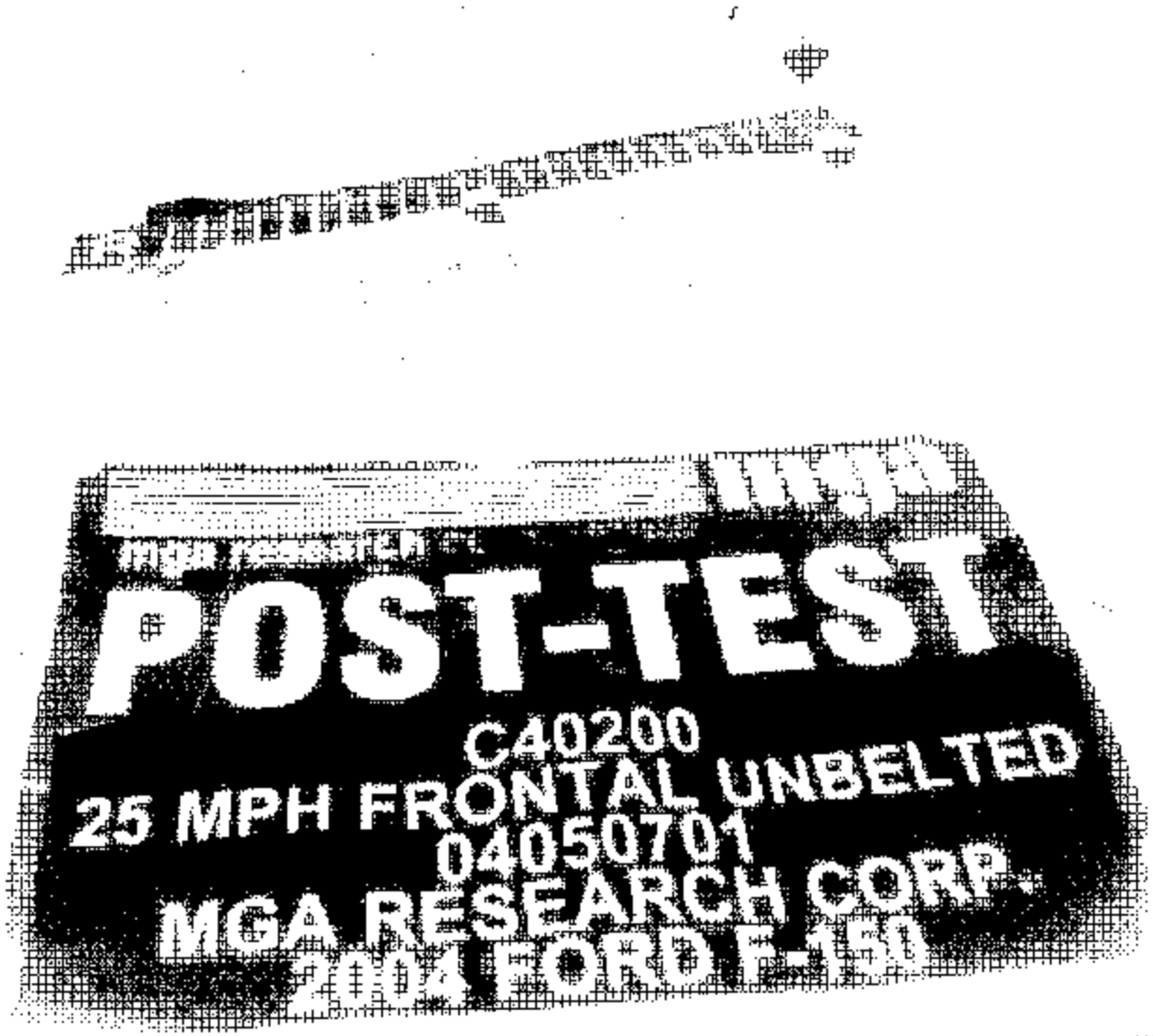
Pre-Test Passenger Dummy Position Right Side View (Door Open)



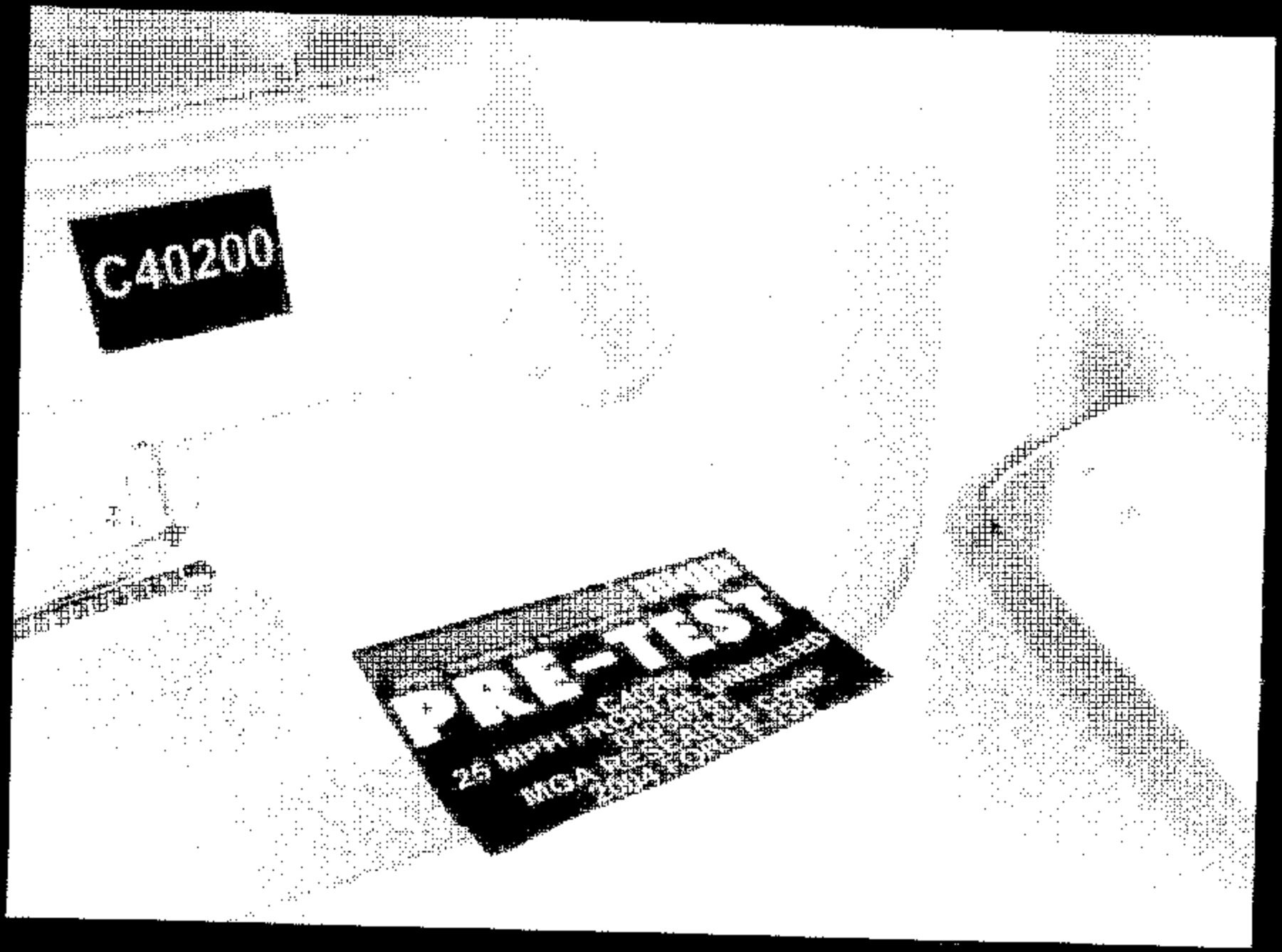
Post-Test Passenger Dummy Position Right Side View (Door Open)



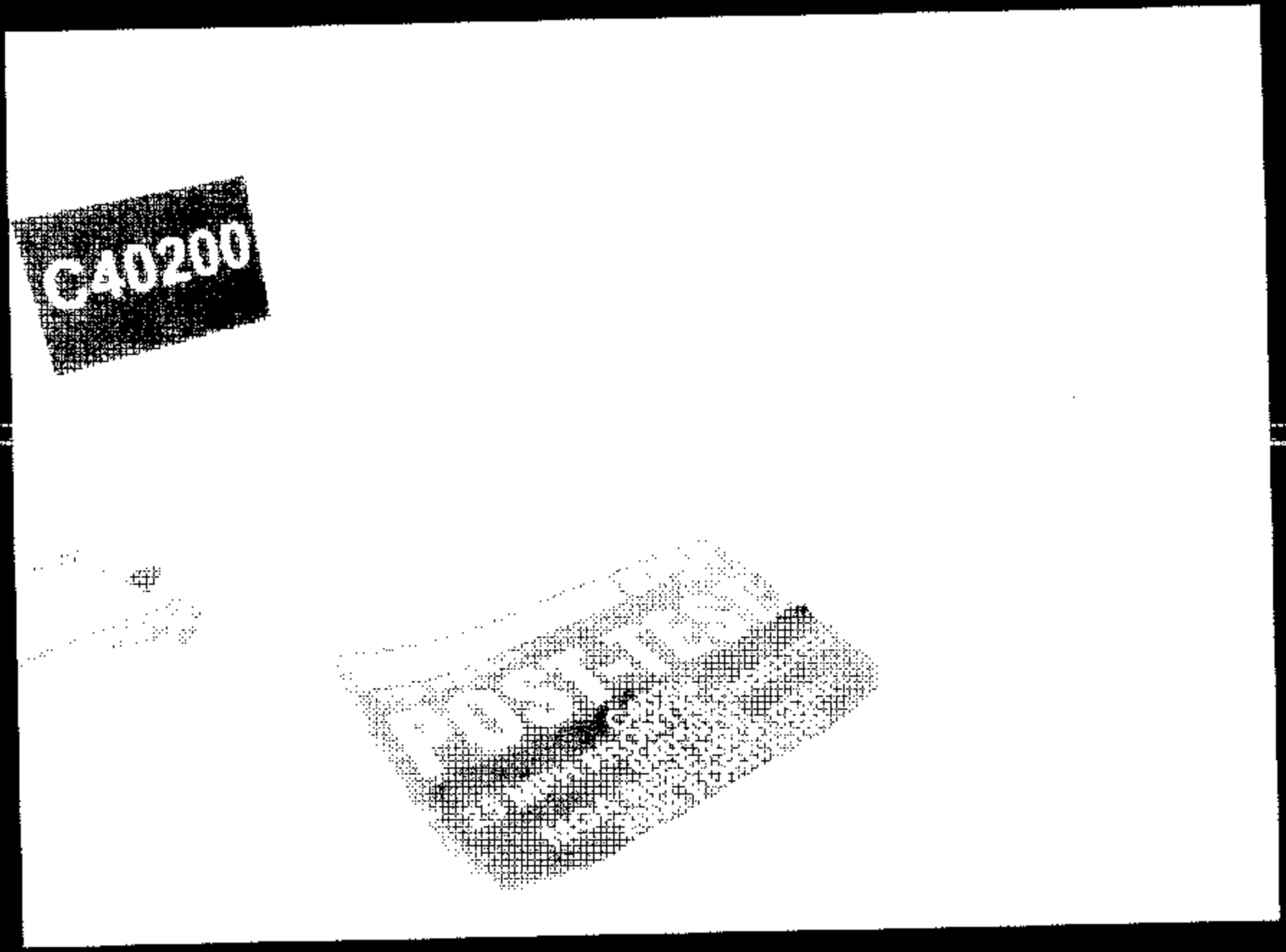
Pre-Test Passenger Dummy Seat Position



Post-Test Passenger Dummy Seat Position



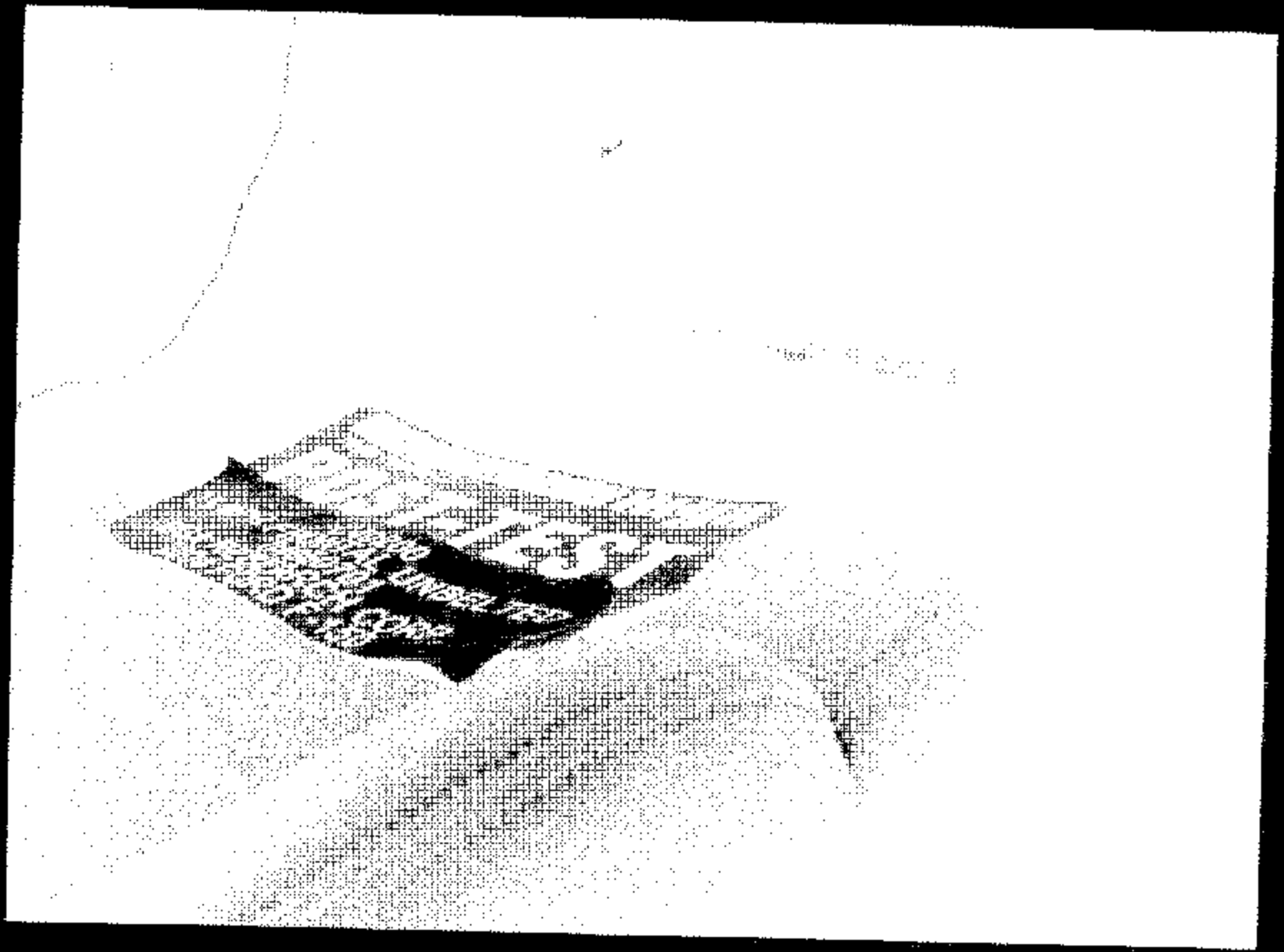
Pre-Test Passenger Dummy Feet Position



Post-Test Passenger Dummy Feet Position

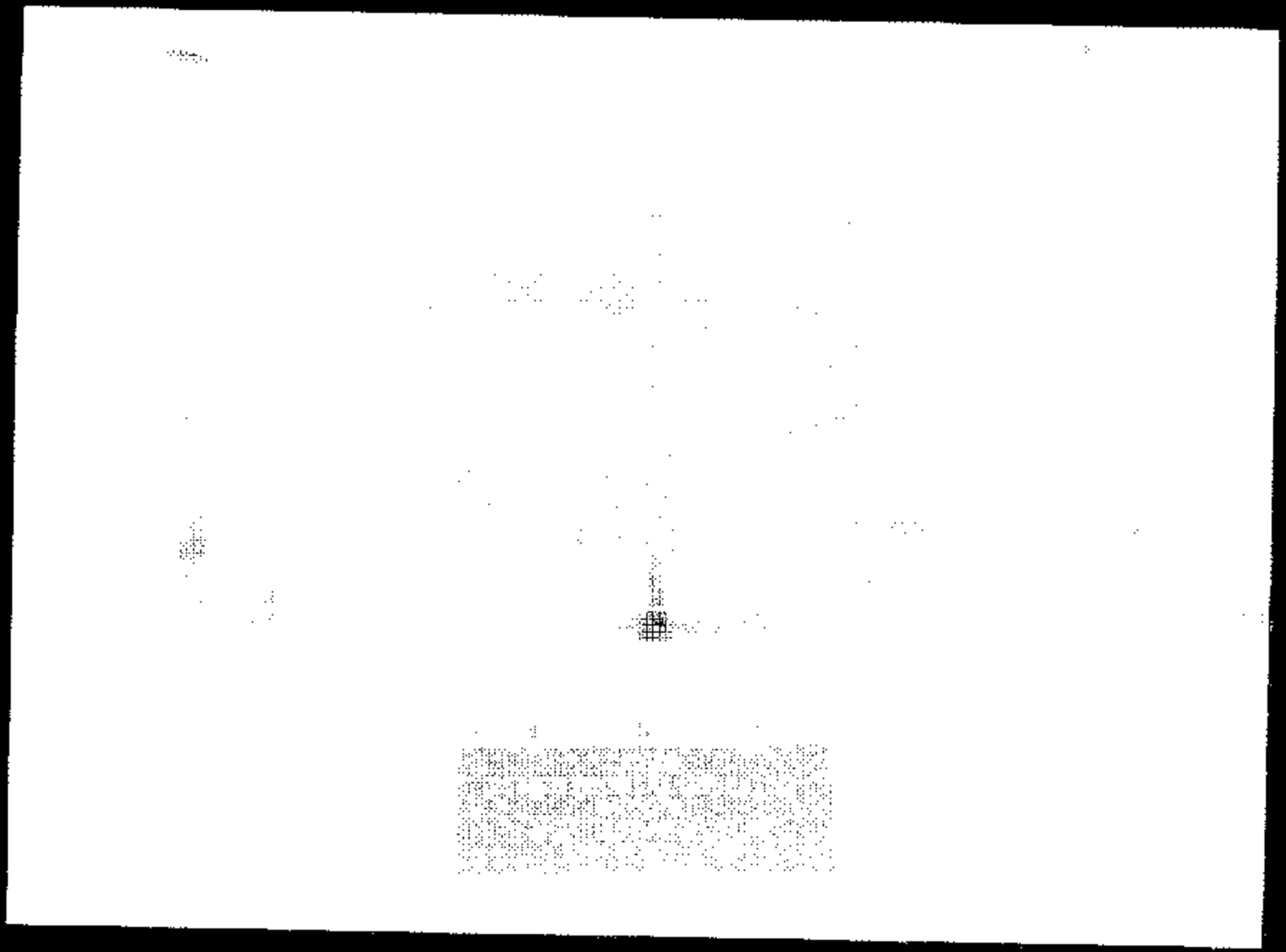
Pre-Test Passenger Side Knee Bolster View

Post-Test Passenger Side Knee Bolster View



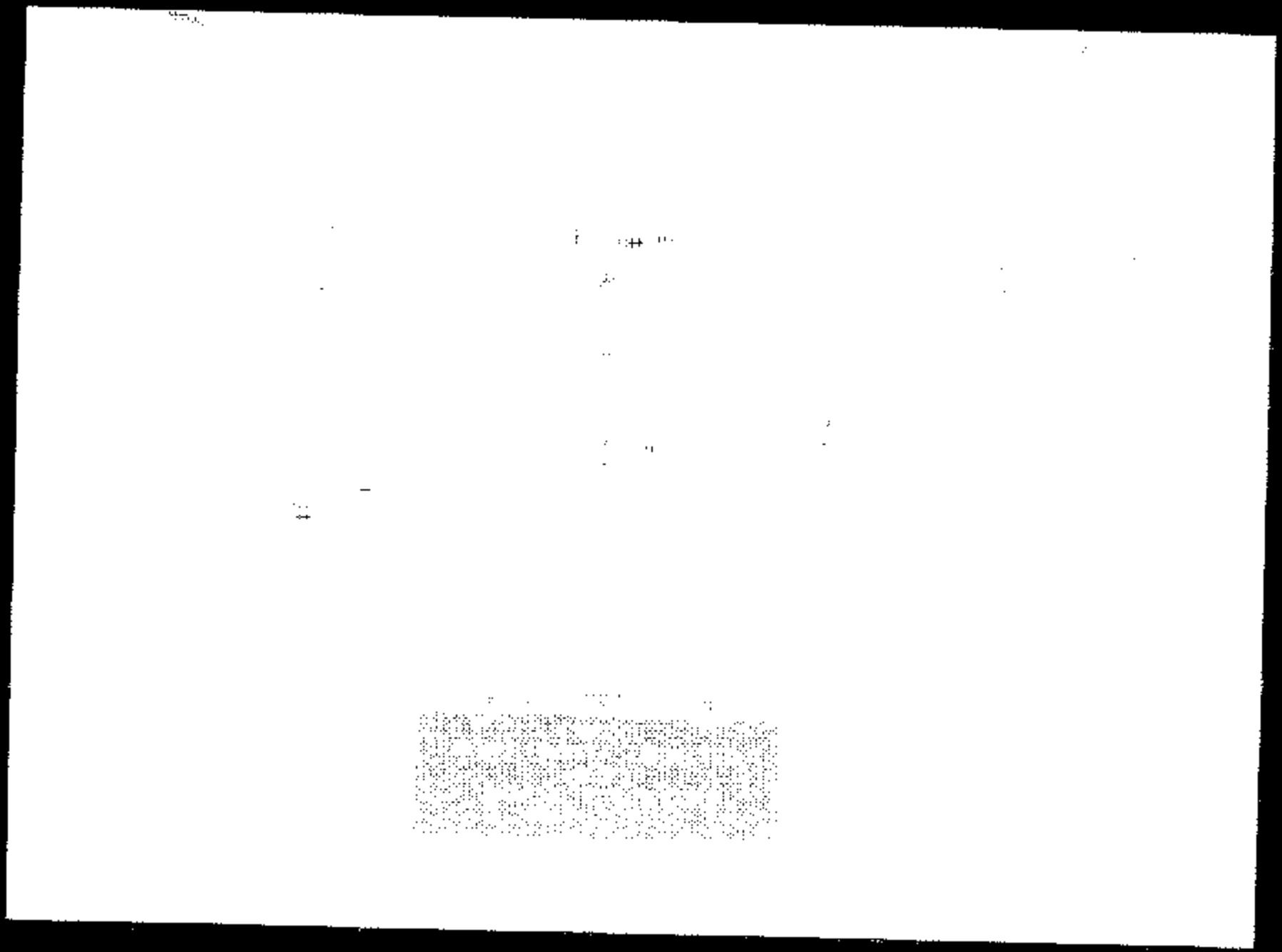
Post-Test Passenger Dummy Knee Contact

Post-Test Passenger Dummy Airbag Contact

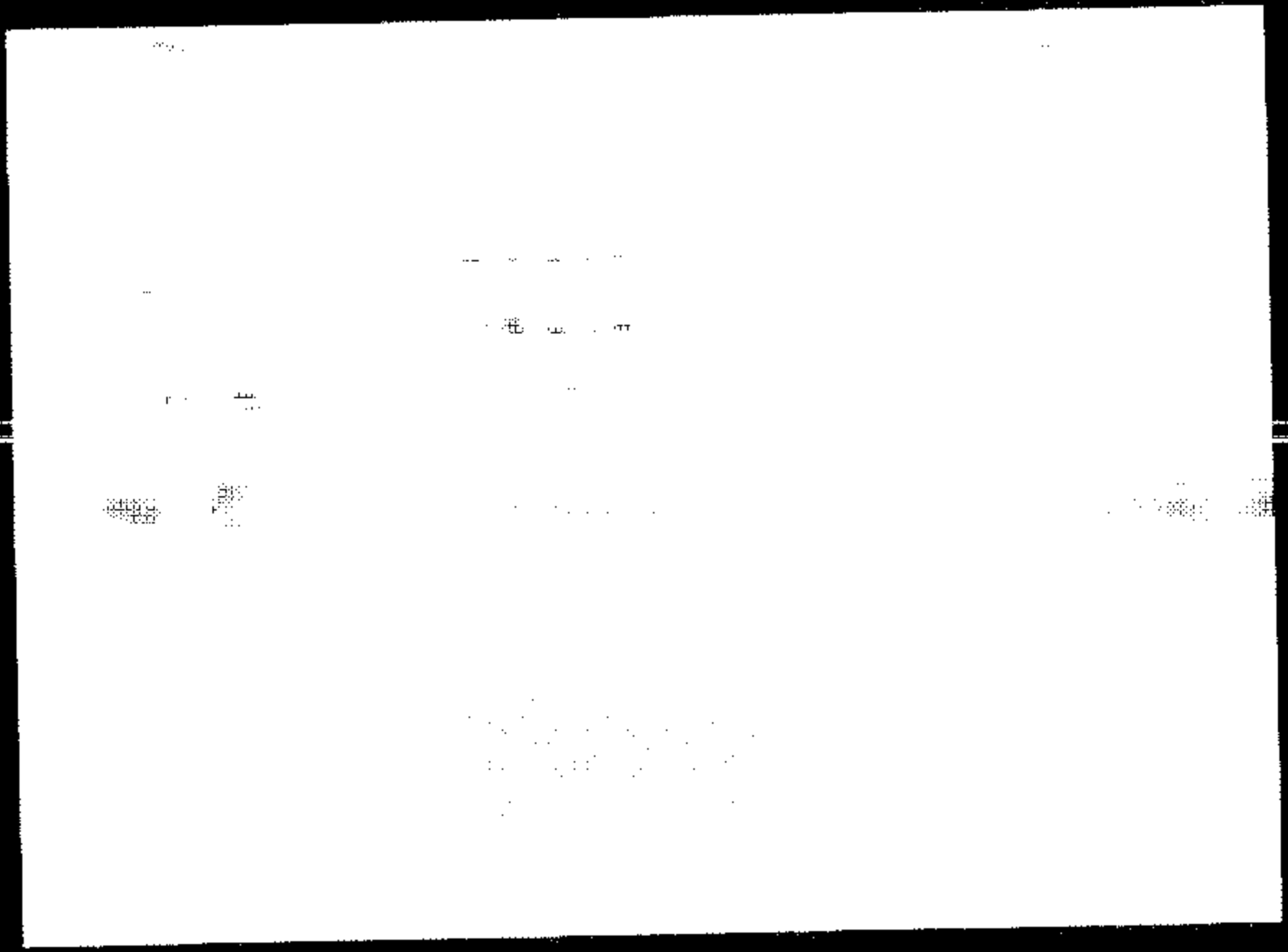


Rollover 90 Degrees

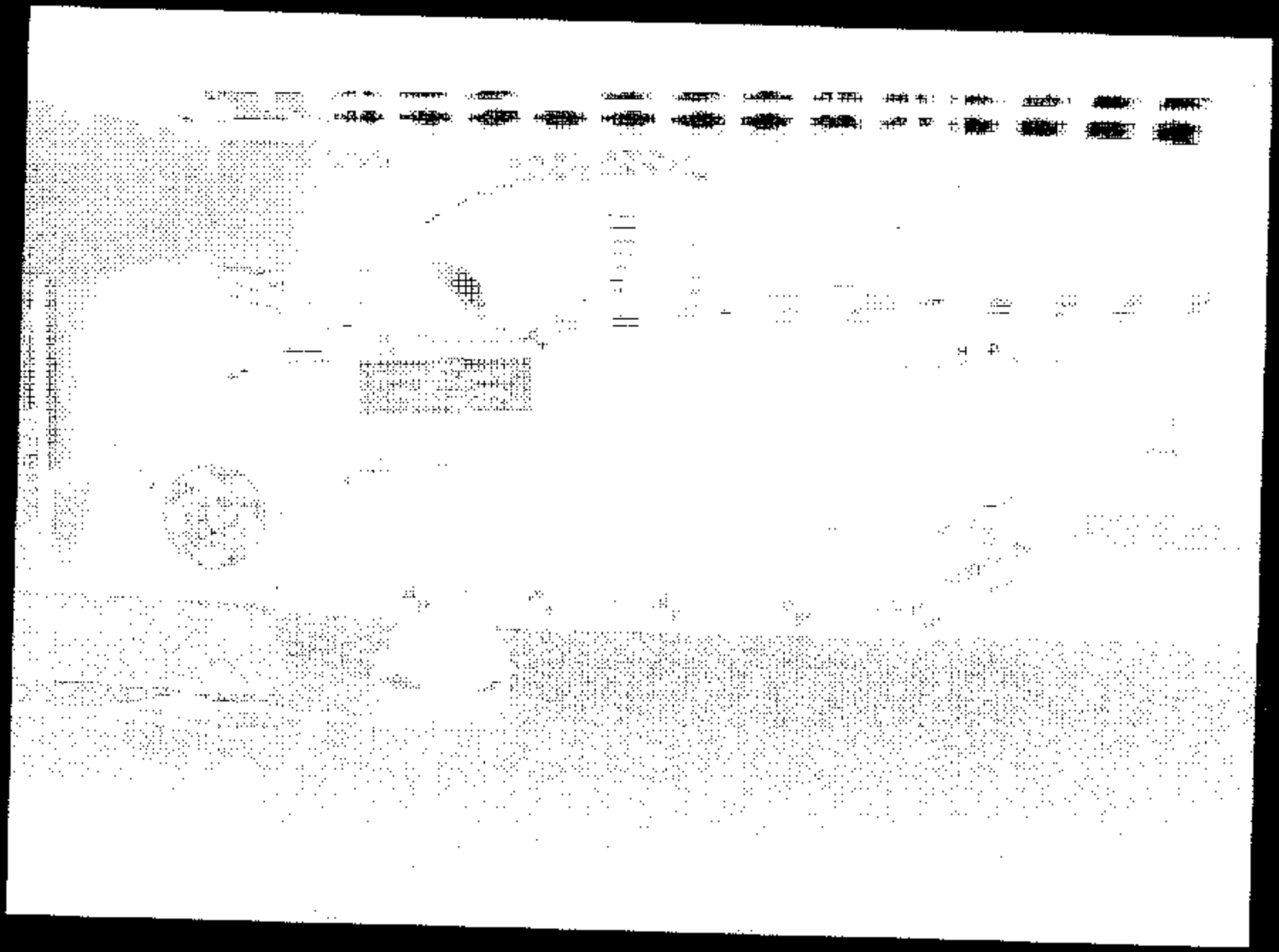
Rollover 180 Degrees



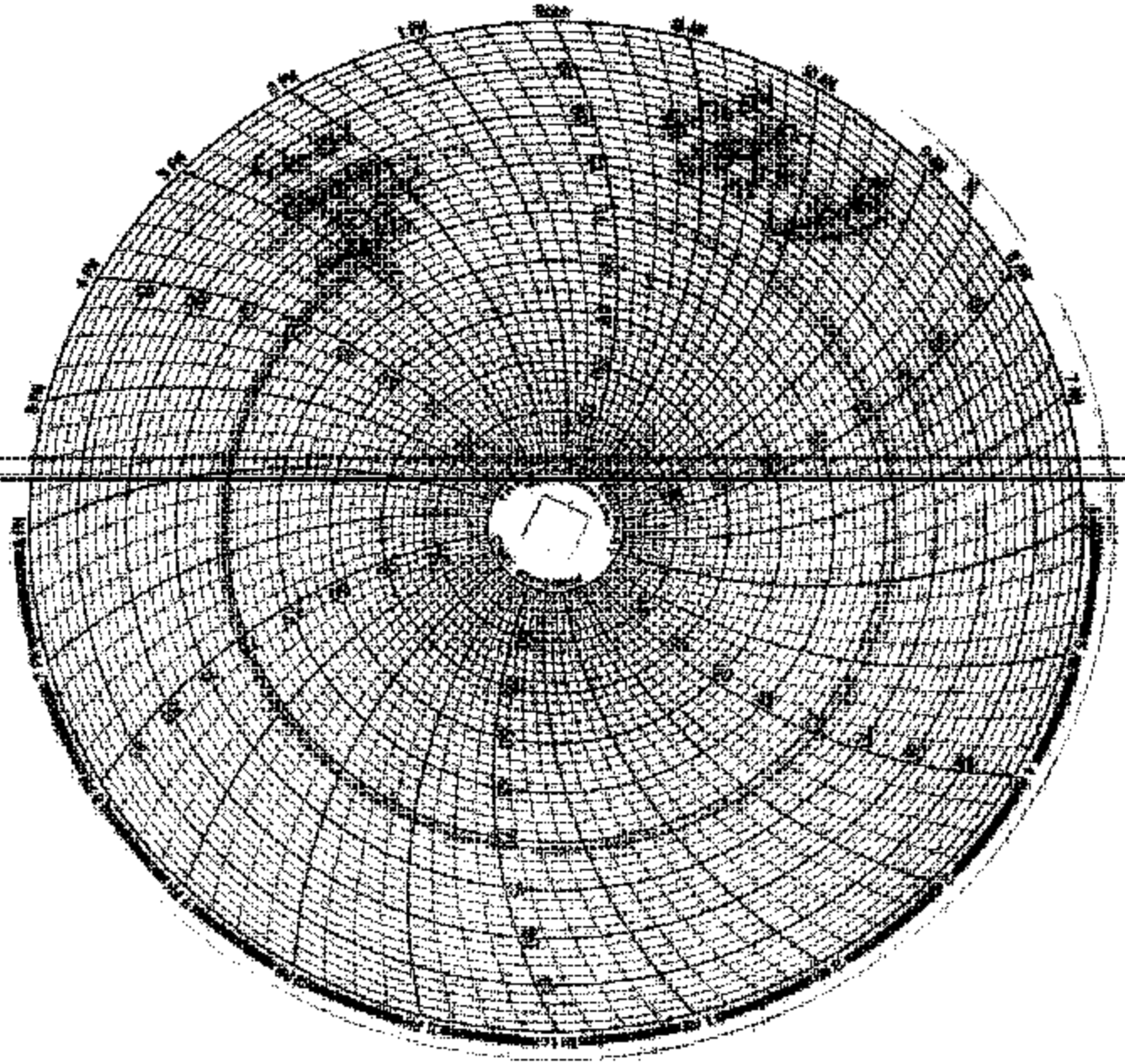
Rollover 270 Degrees



Rollover 360 Degrees



Vehicle Impact



Temperature Plot

APPENDIX D

LOW RISK PHOTOGRAPHS

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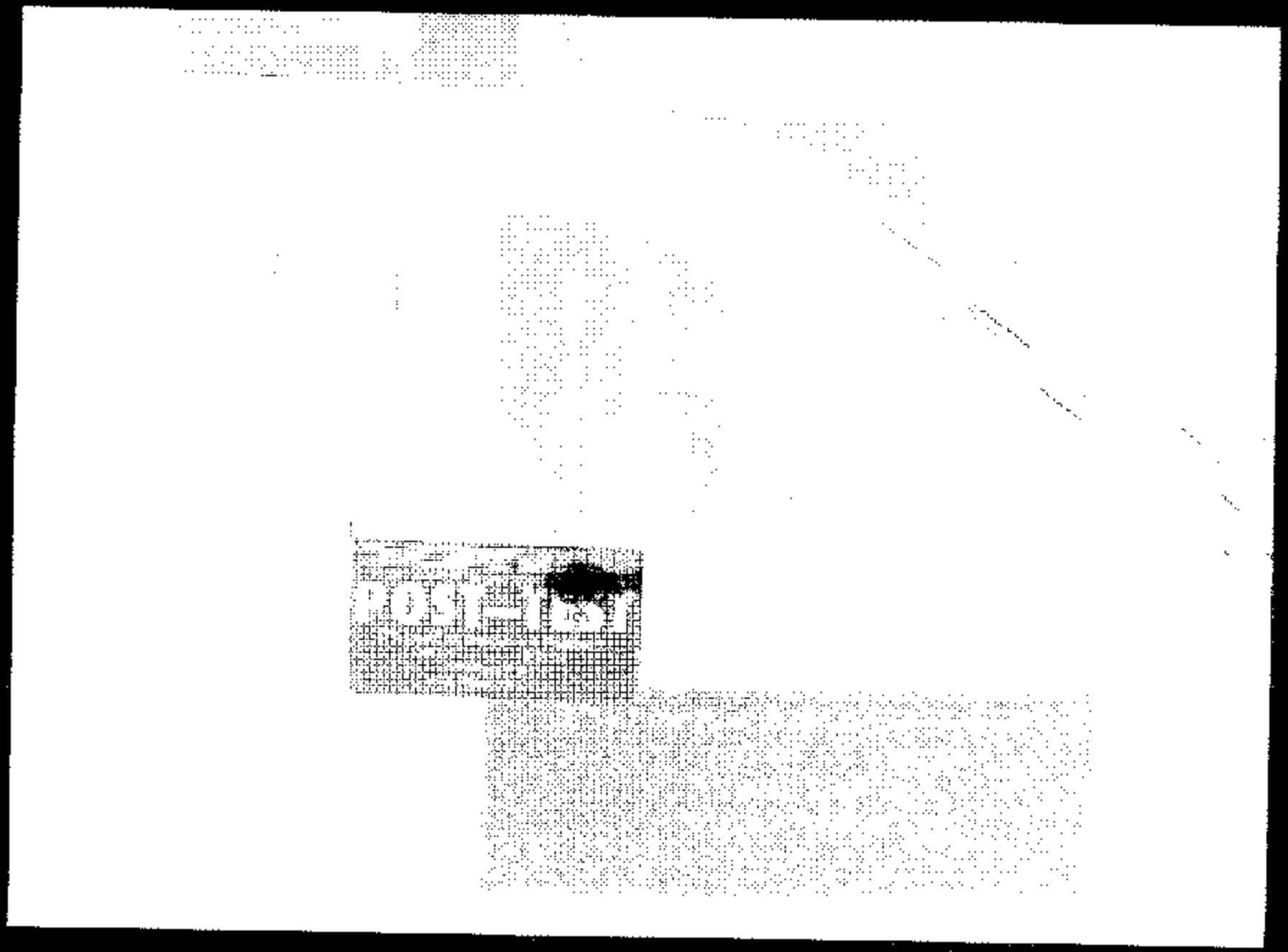
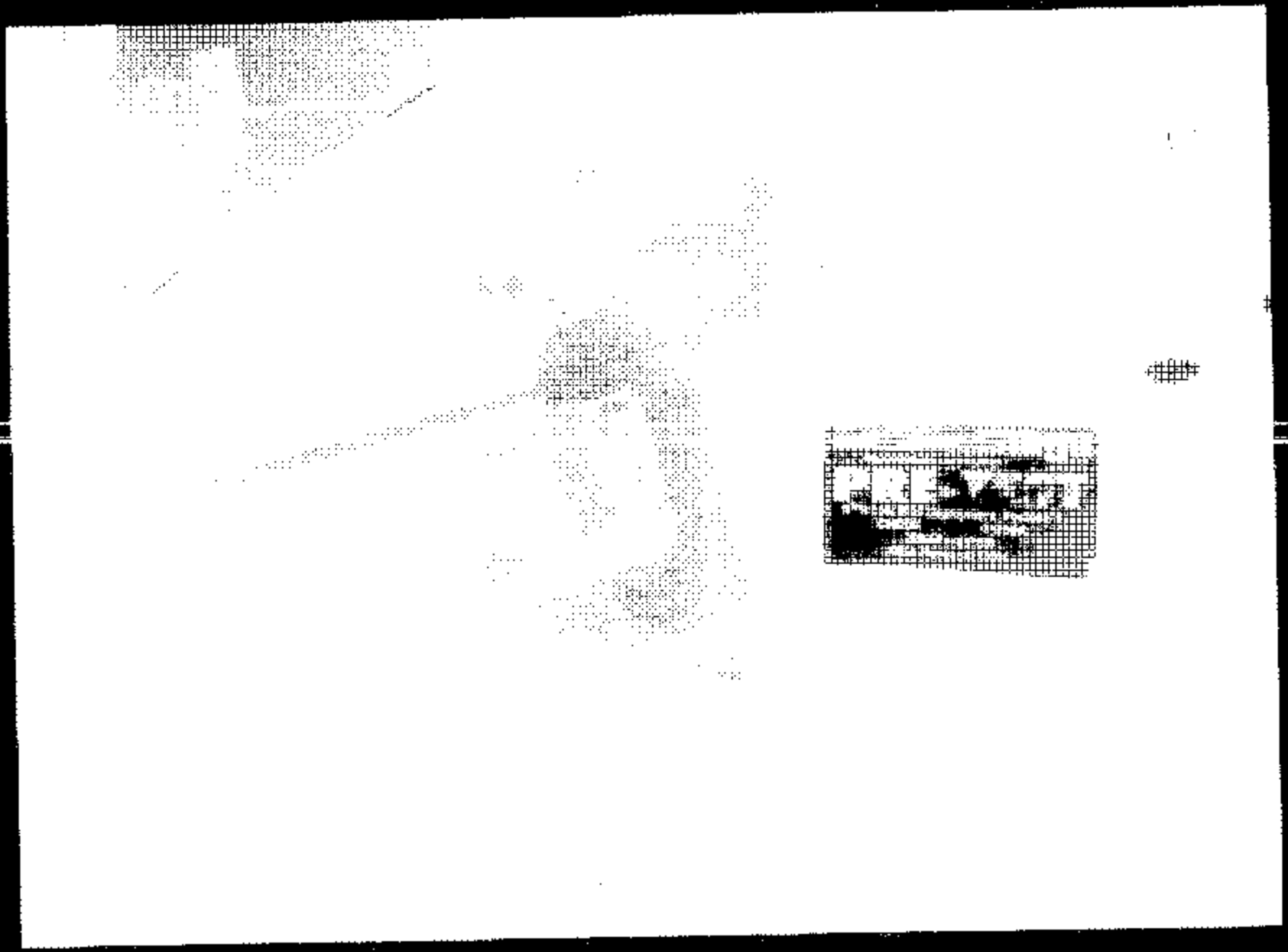
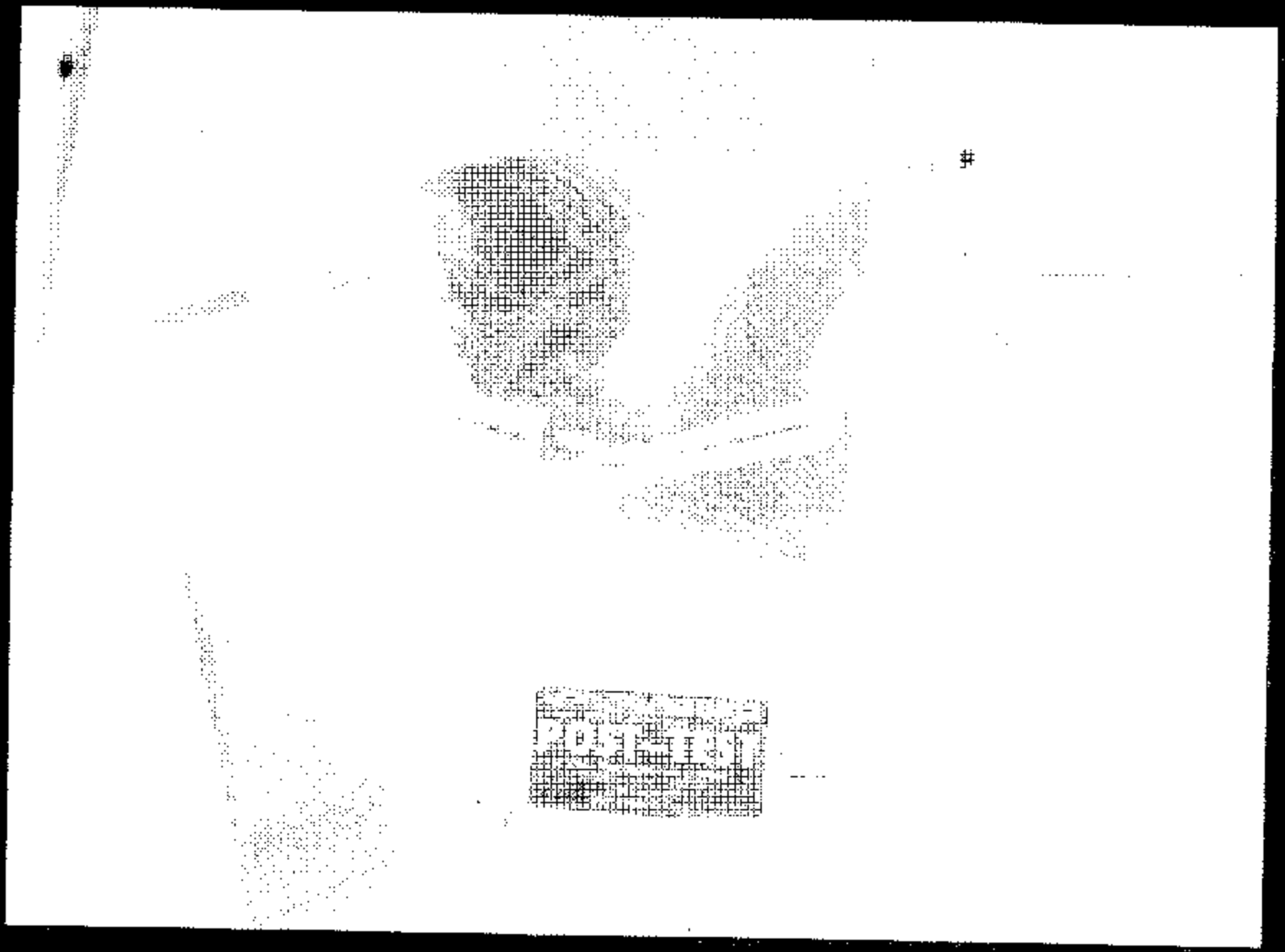
Post-Test 5th Fem. P1 Driver Dummy Left Side View



Post-Test 5th Fem. P1 Driver Dummy Right Side View



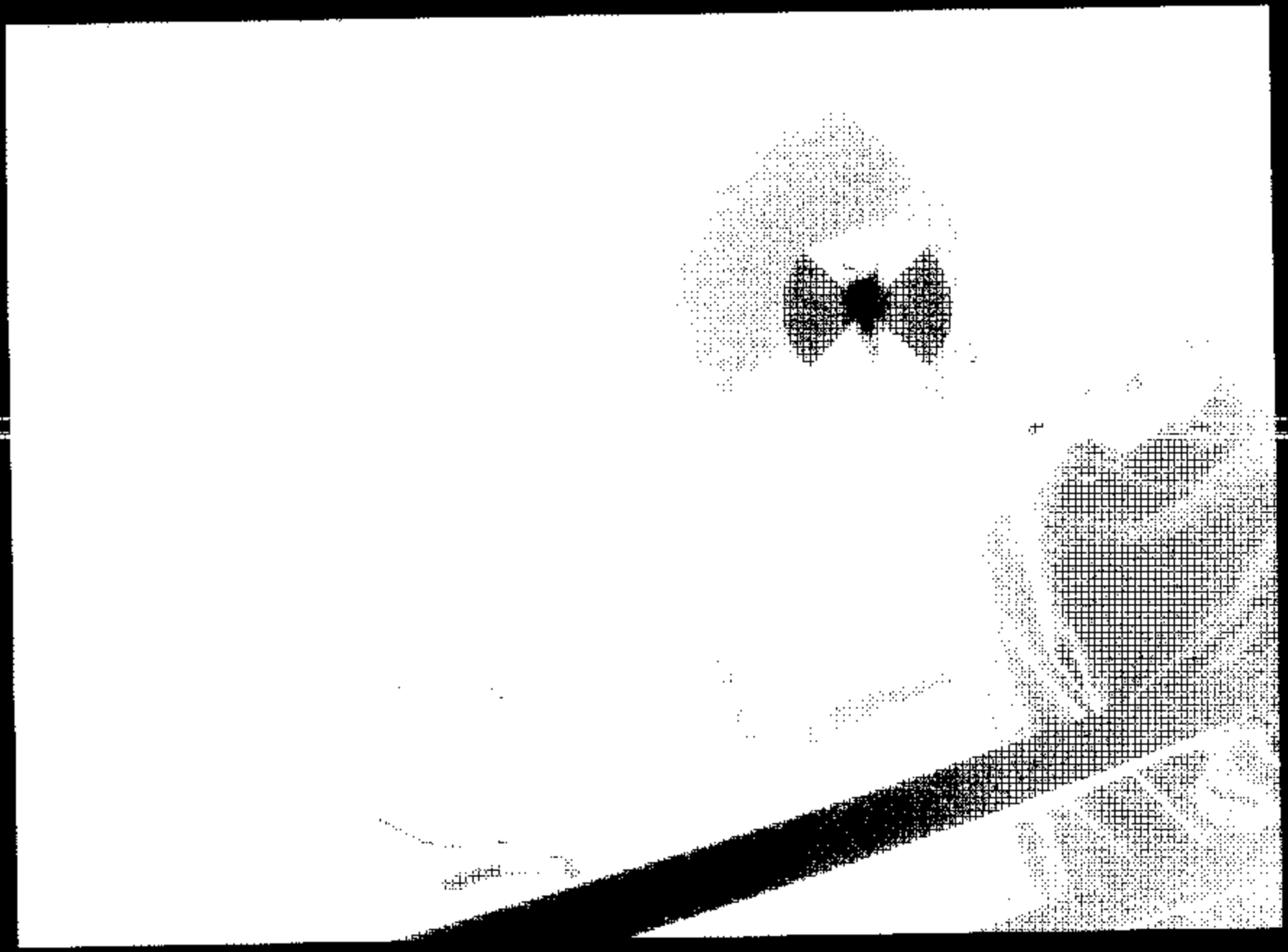
Pre-Test 5th Fem. P1 Driver Dummy Left Side View (Door Open)



Post-Test 5th Fem. P1 Driver Dummy Left Side View (Door Open)

Pre-Test 5th Fem. P1 Driver Dummy Right Side View (Door Open)

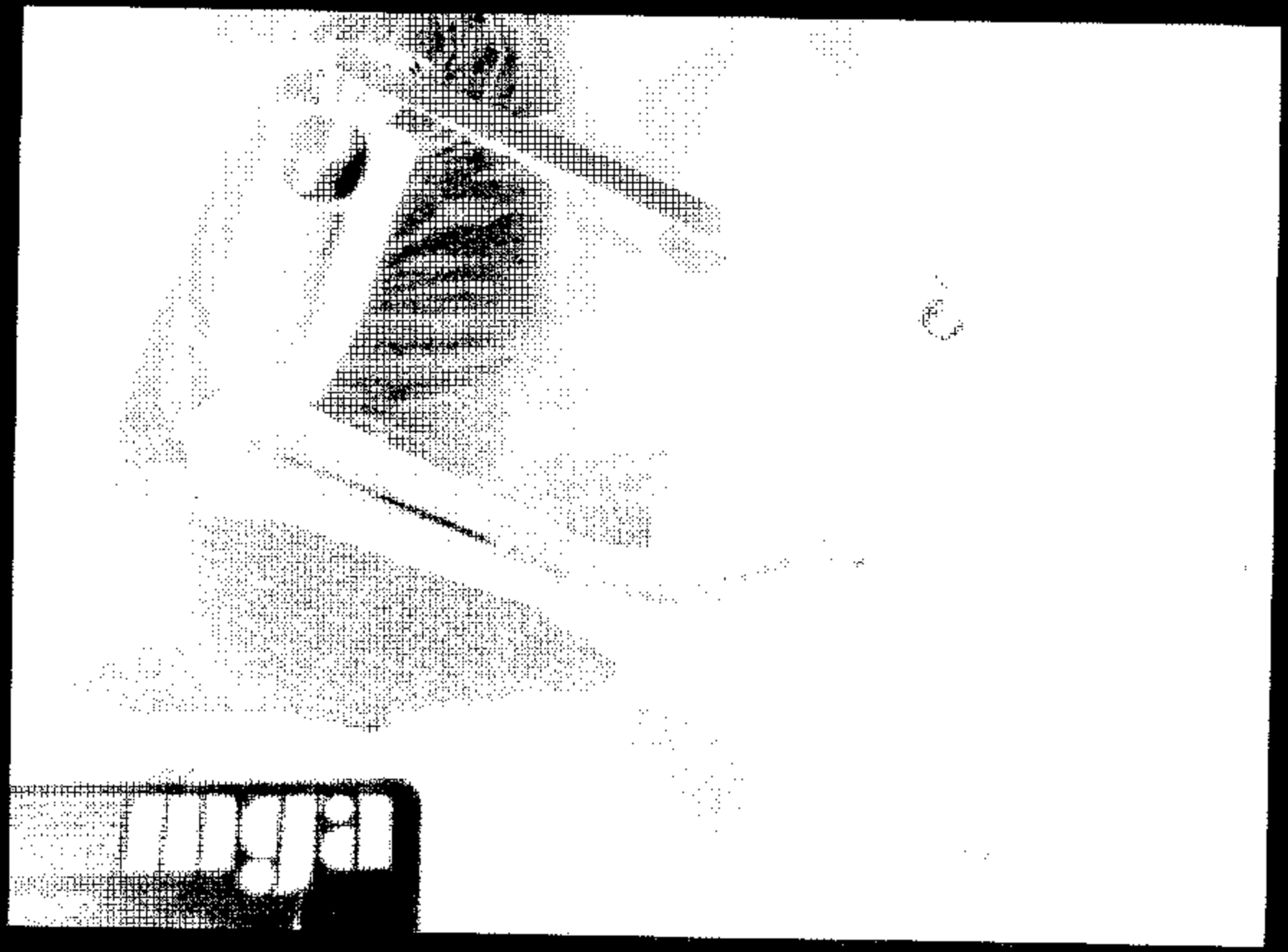
Post-Test 5th Fem. P1 Driver Dummy Right Side View (Door Open)



Pre-Test 5th Fem. P1 Driver Dummy Left Side Head Position View

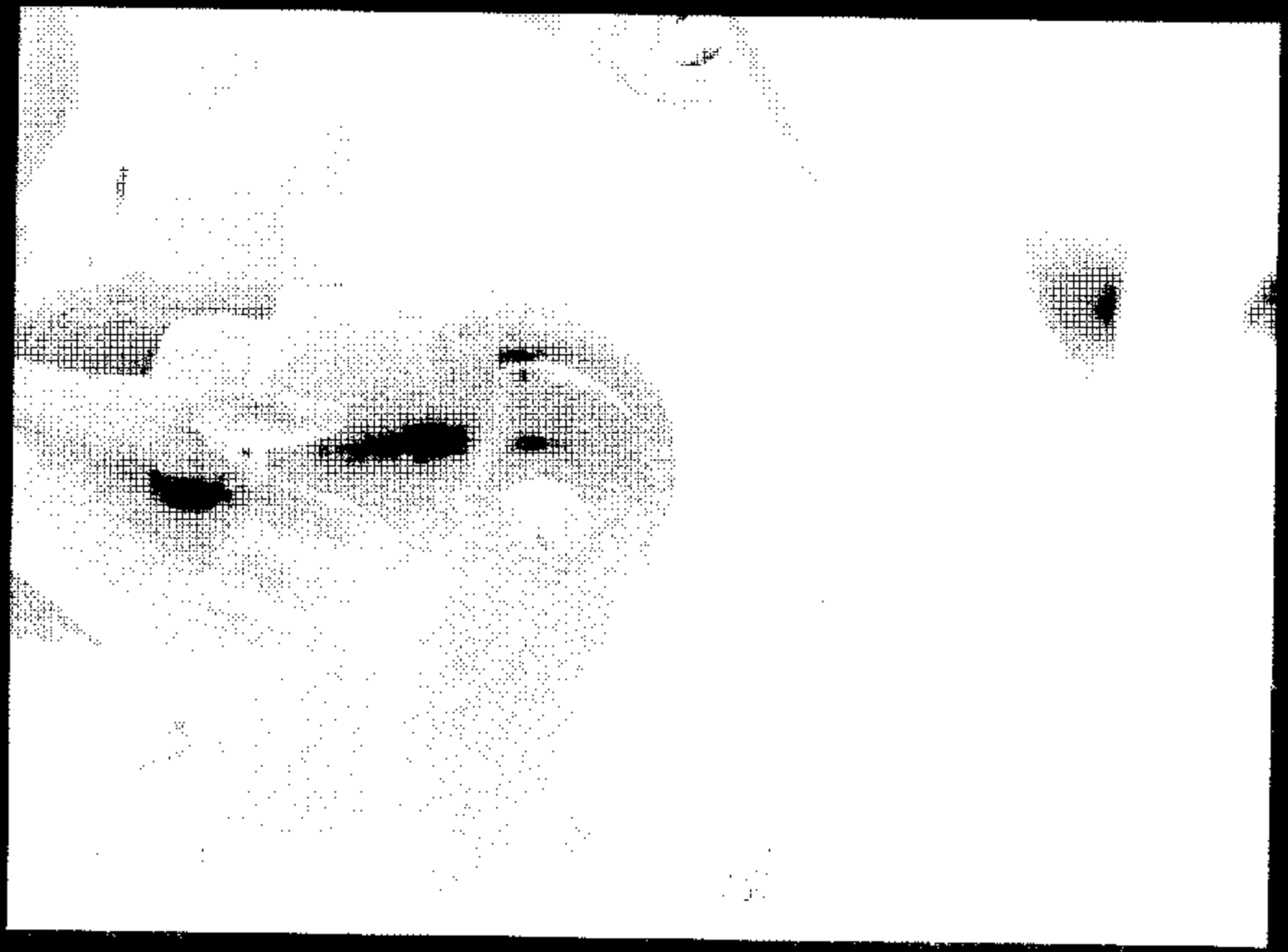
Pre-Test 5th Fem. P1 Driver Dummy Right Side Head Position View

Pre-Test 5th Fem. P1 Driver Dummy Left Side Mid Position View

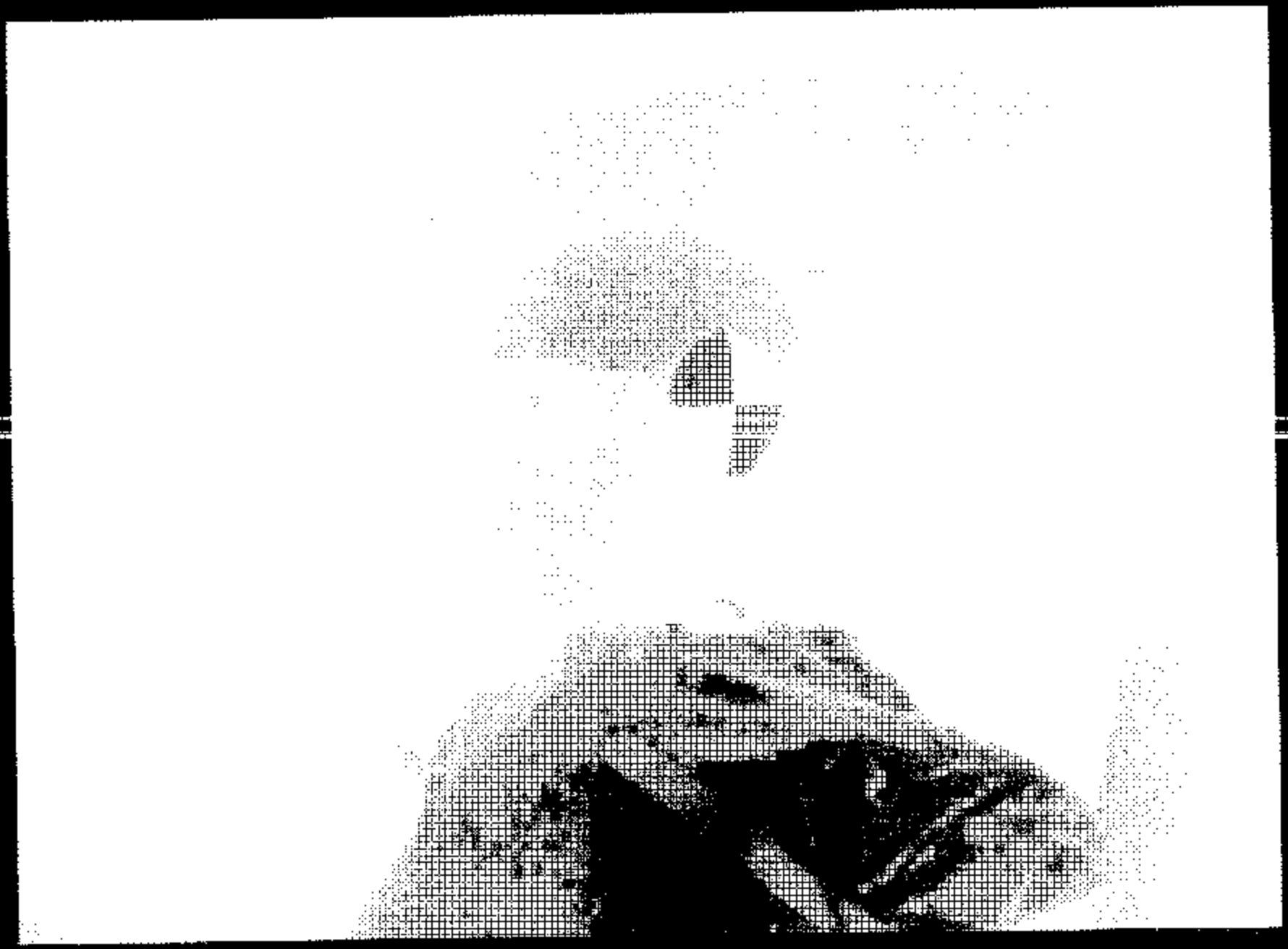


Pre-Test 5th Fem. P1 Driver Dummy Right Side Mid Position View

Pre-Test 5th Fem. P1 Driver Dummy Left Side Knee Position View



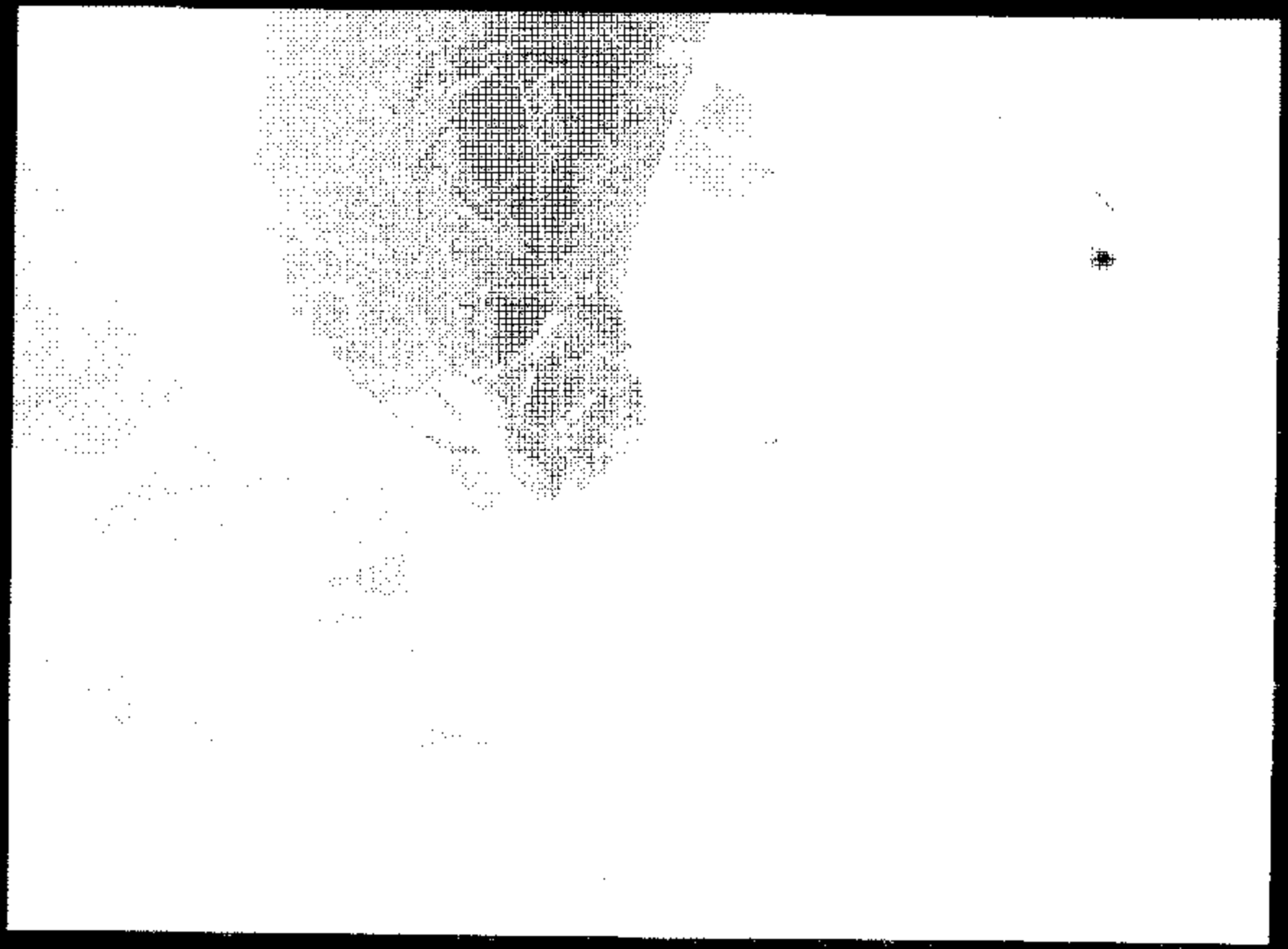
Pre-Test 5th Fem. P1 Driver Dummy Right Side Knee Position View



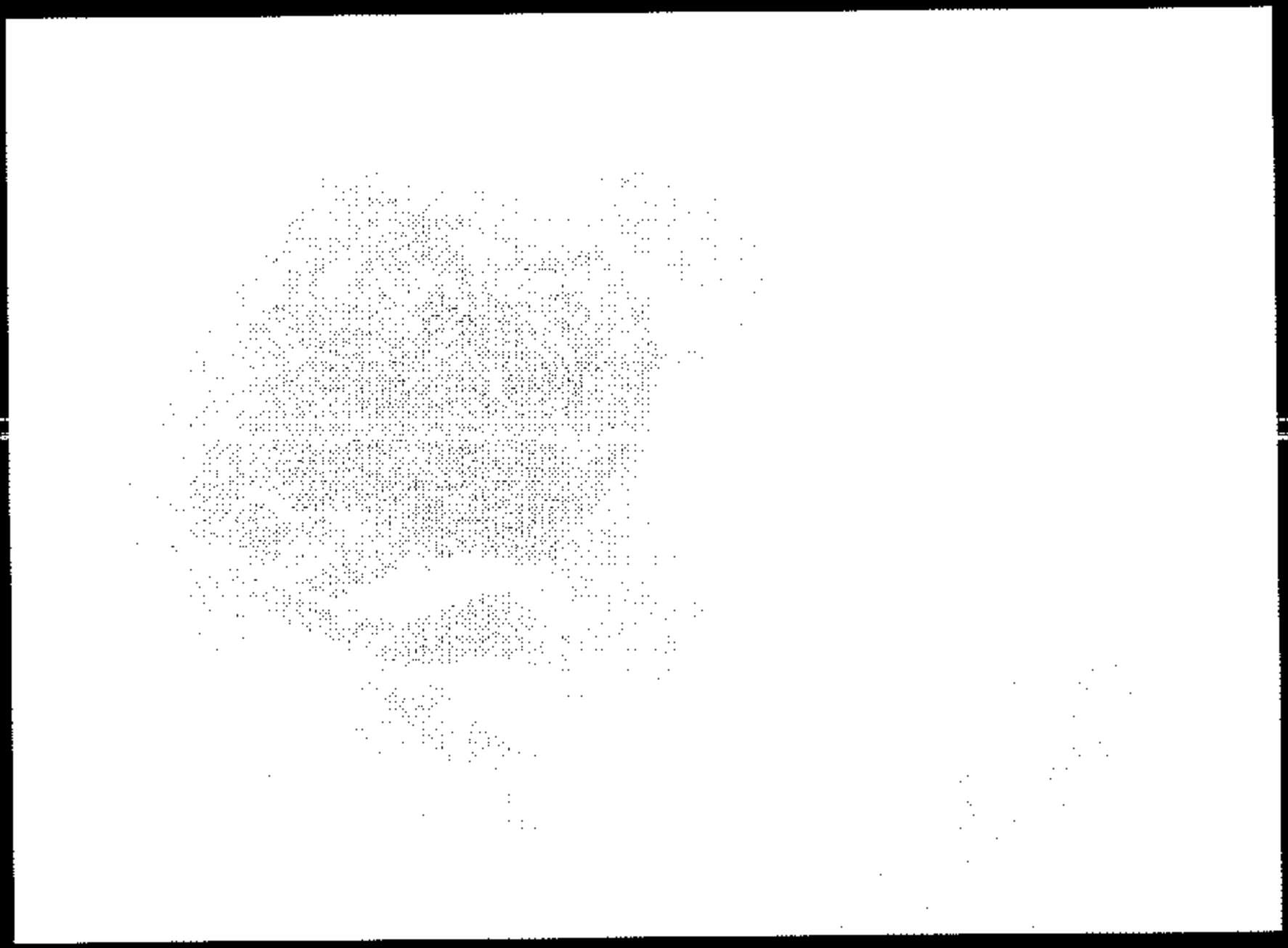
Post-Test 5th Fem. P1 Driver Dummy Left Side Head Contact View

Post-Test 5th Fem. P1 Driver Dummy Right Side Head Contact View

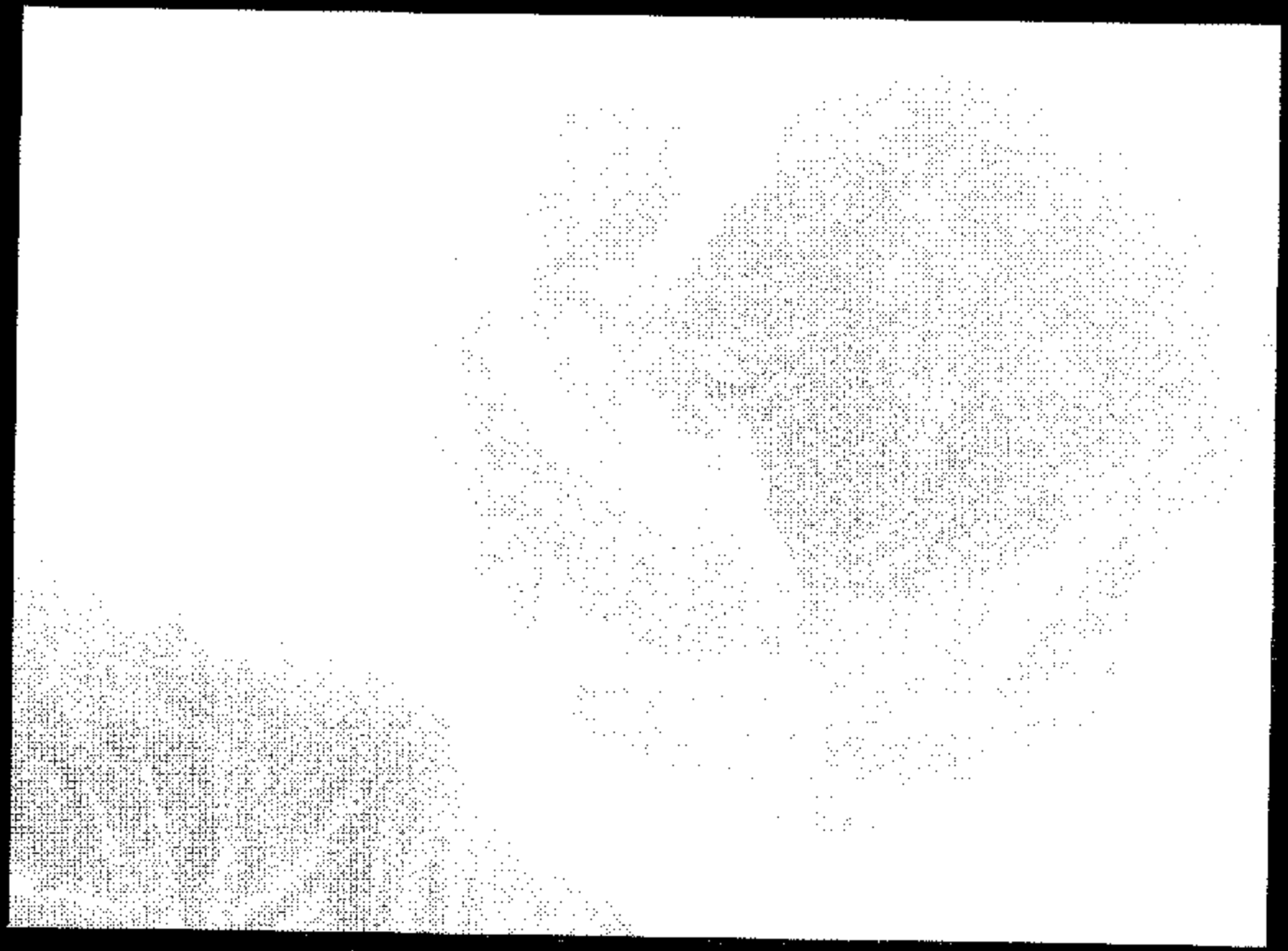
Post-Test 5th Fem. P1 Driver Dummy Left Side Knee Contact View



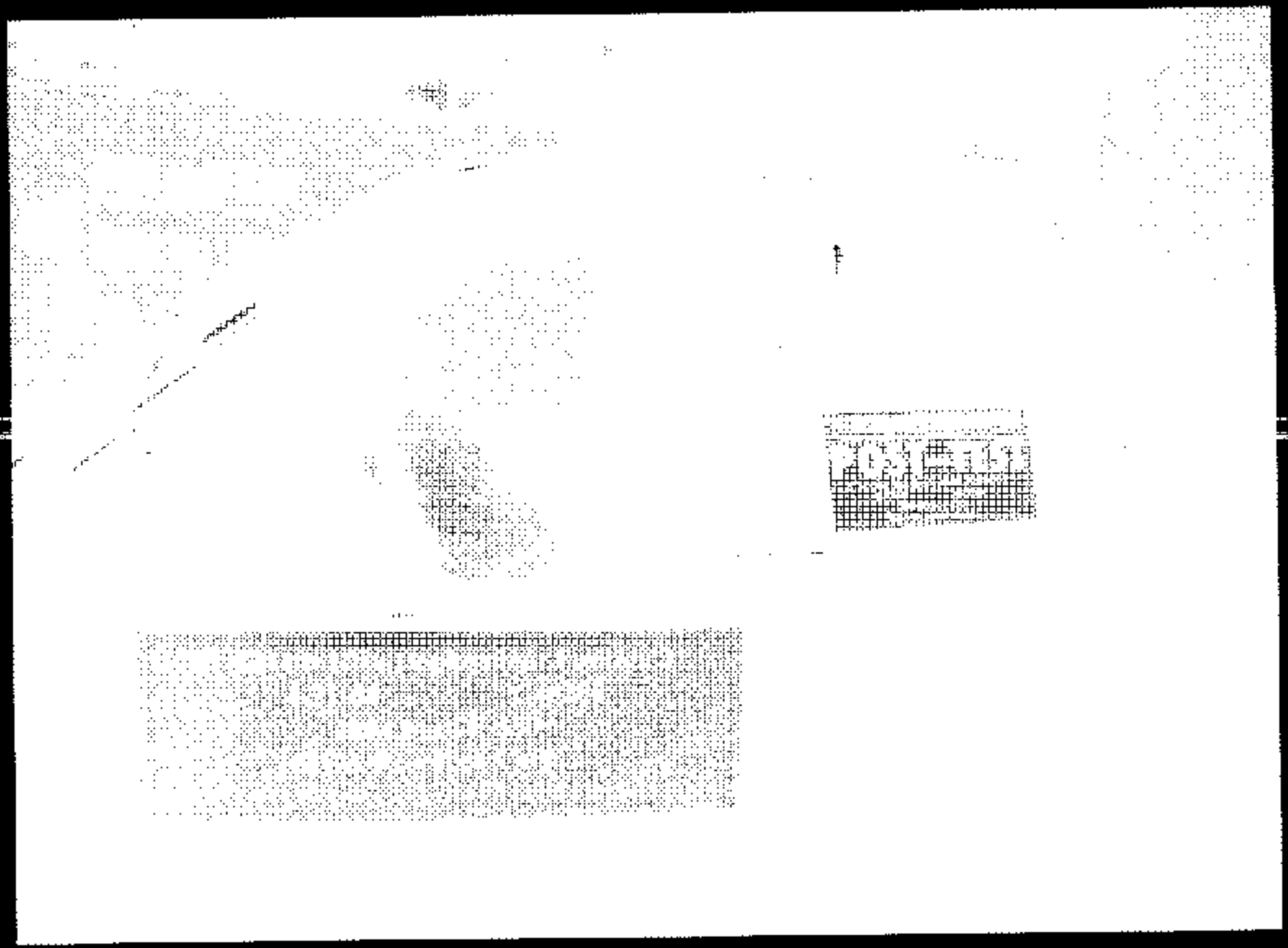
Post-Test 5th Fem. P1 Driver Dummy Right Side Knee Contact View



Post-Test 5th Fem. P1 Driver Dummy Airbag Left View

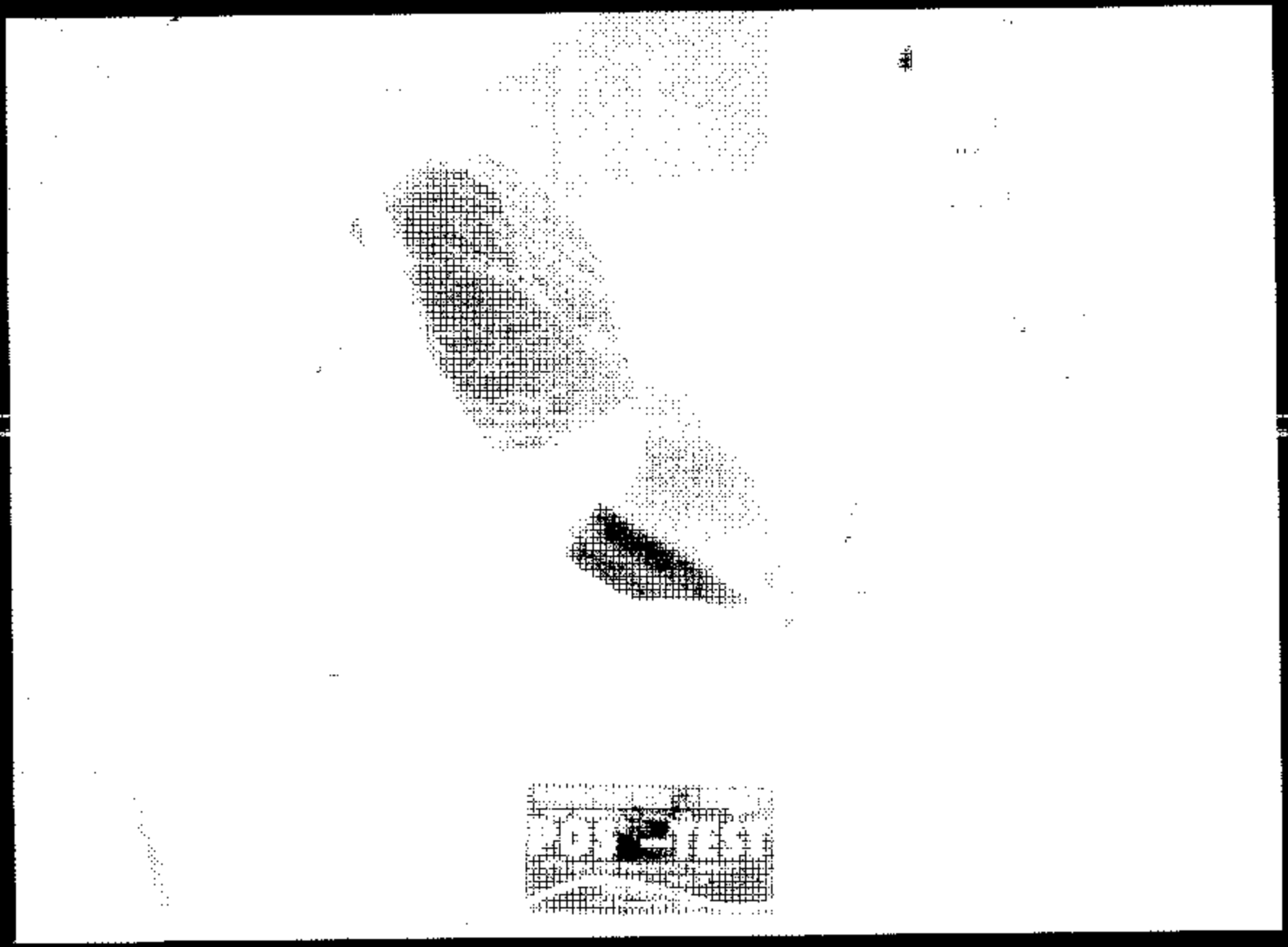


Post-Test 5th Fem. P1 Driver Dummy Airbag Right View

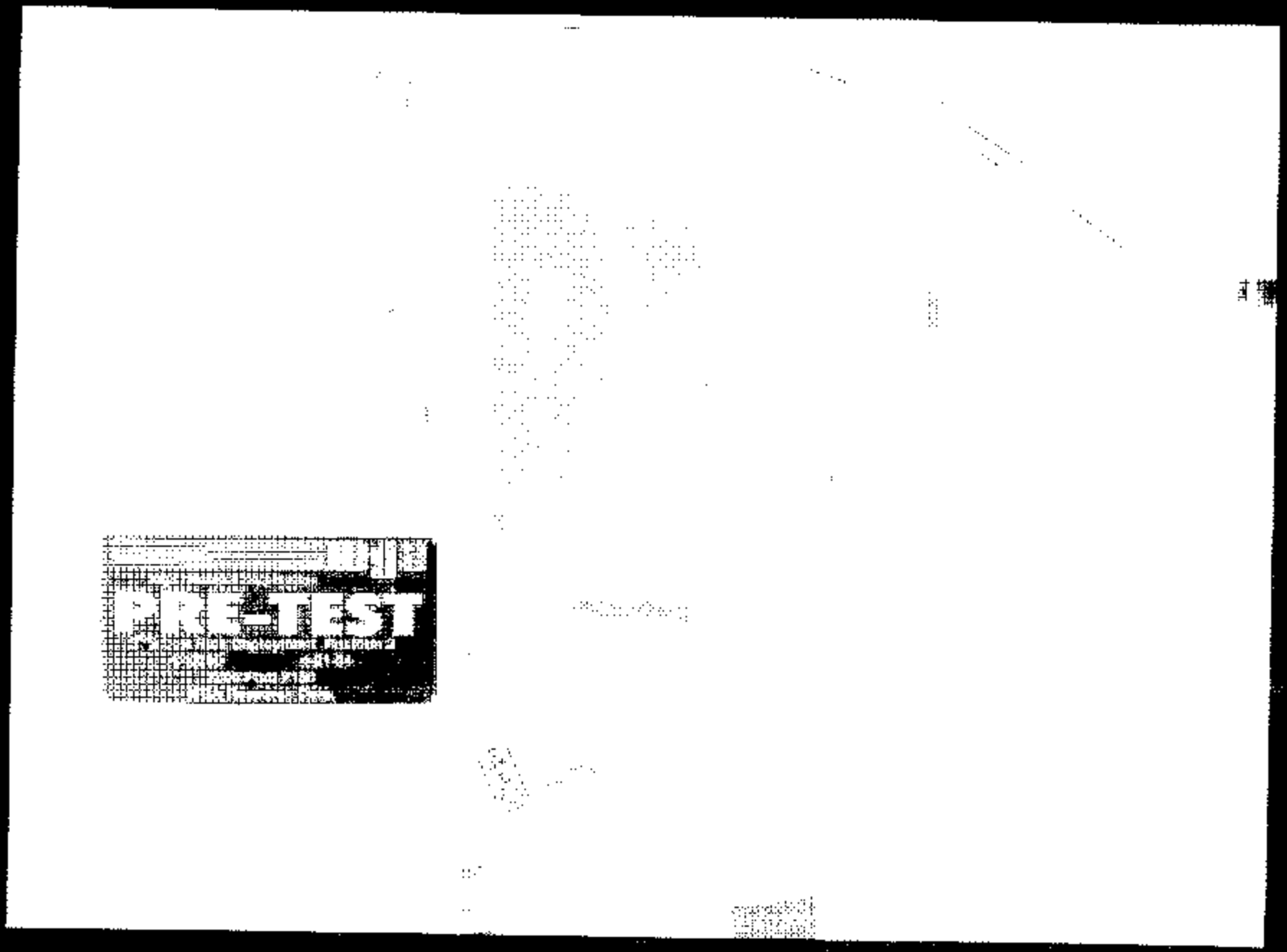


Post-Test 5th Fem. P2 Driver Dummy Left Side View

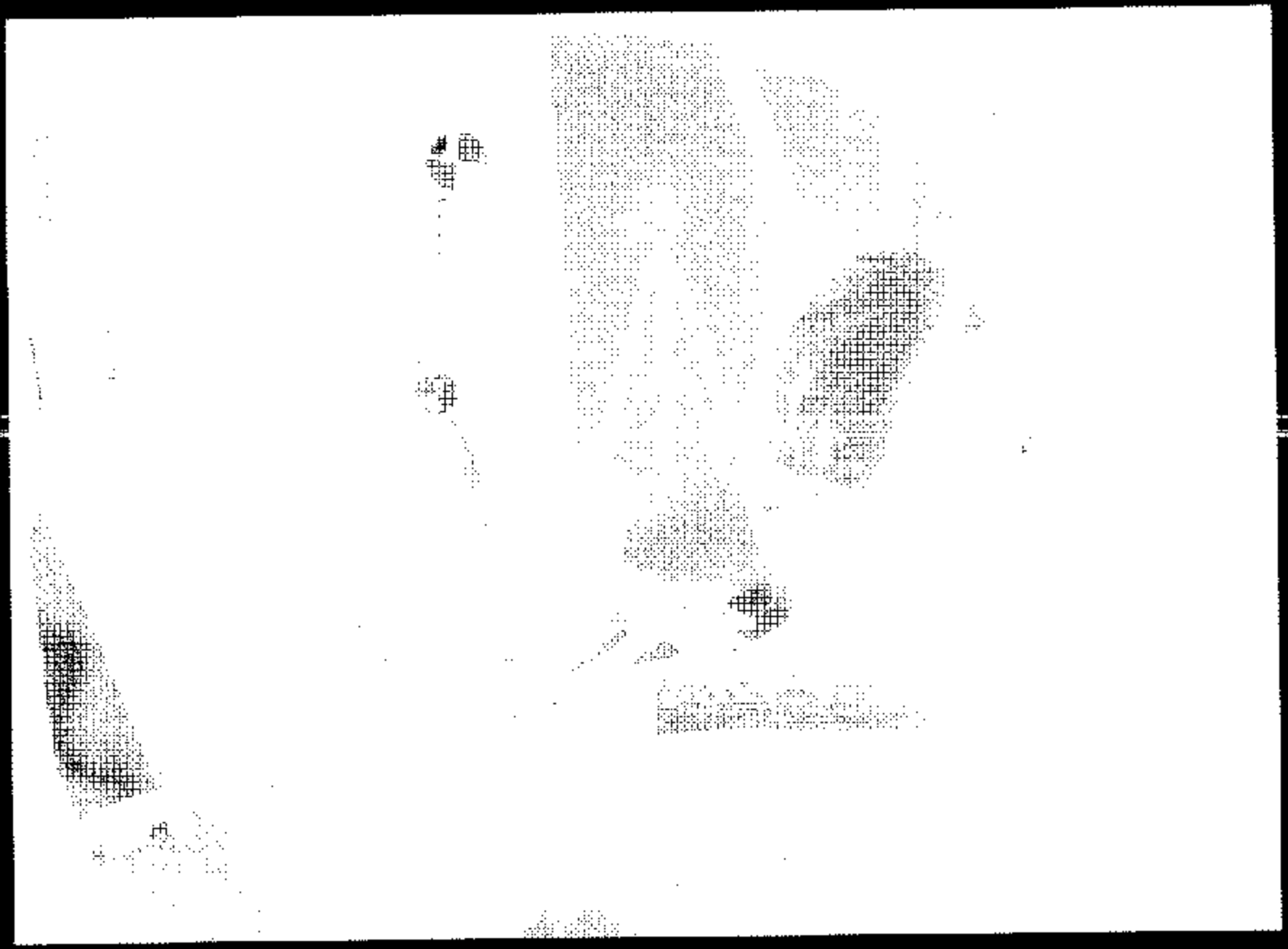
Pre-Test 5th Fem. P2 Driver Dummy Left Side View (Door Open)



Post-Test 5th Fem. P2 Driver Dummy Left Side View (Door Open)

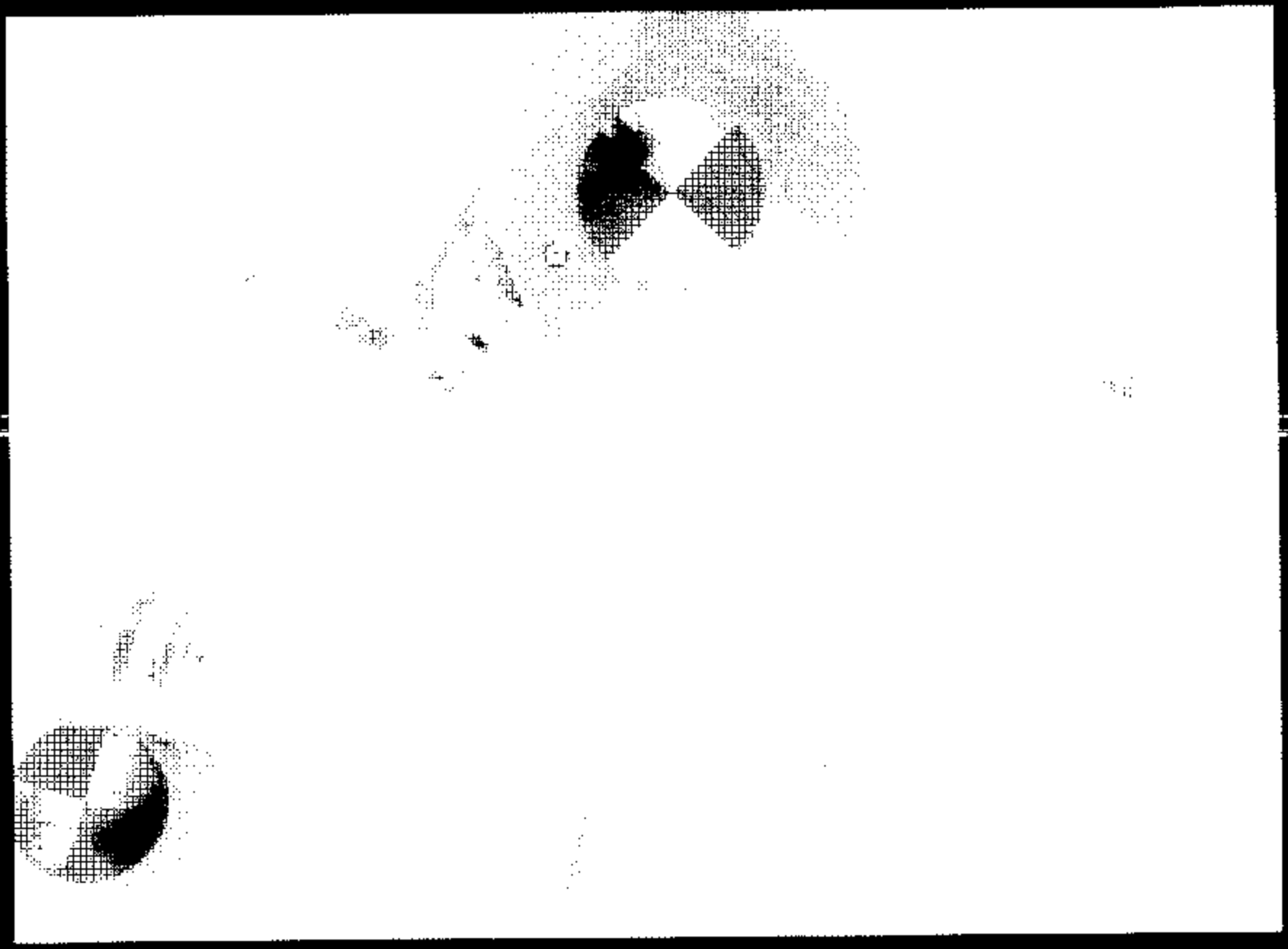


Pre-Test 5th Fem. P2 Driver Dummy Right Side View (Door Open)

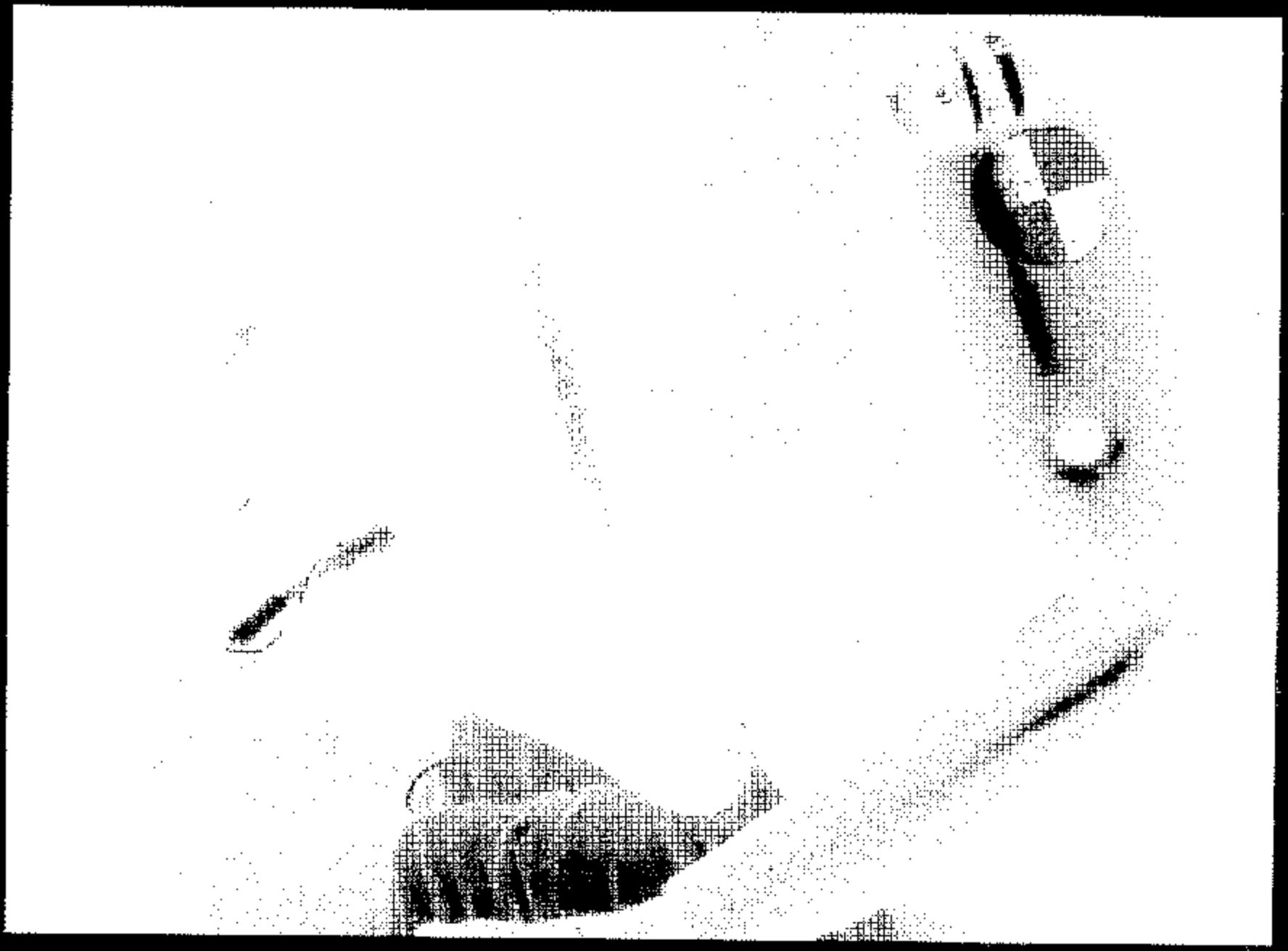


Post-Test 5th Fem. P2 Driver Dummy Right Side View (Door Open)

Pre-Test 5th Fem. P2 Driver Dummy Left Side Head Position View



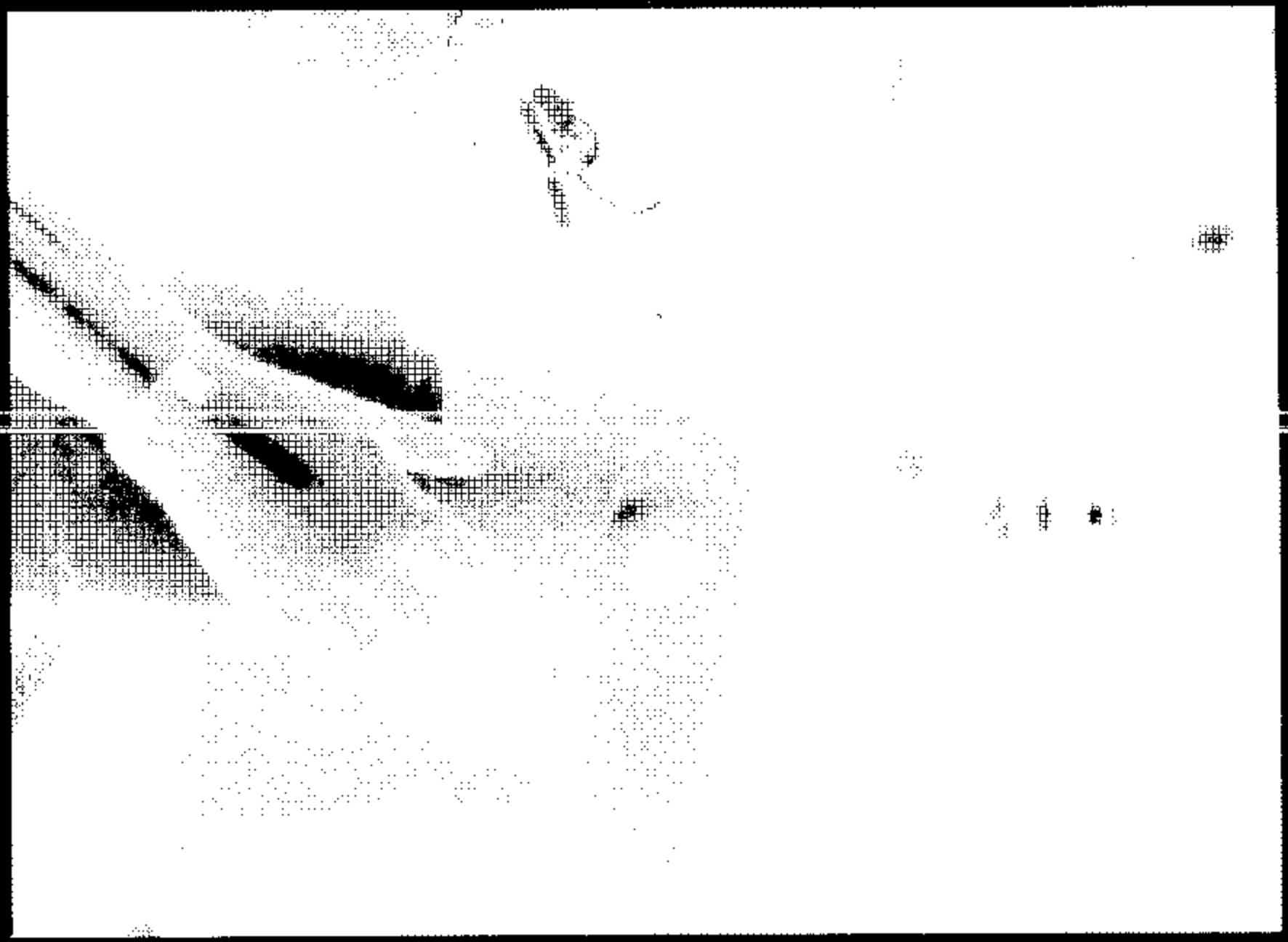
Pre-Test 5th Fem. P2 Driver Dummy Right Side Head Position View



Pre-Test 5th Fem. P2 Driver Dummy Left Side Mid Position View

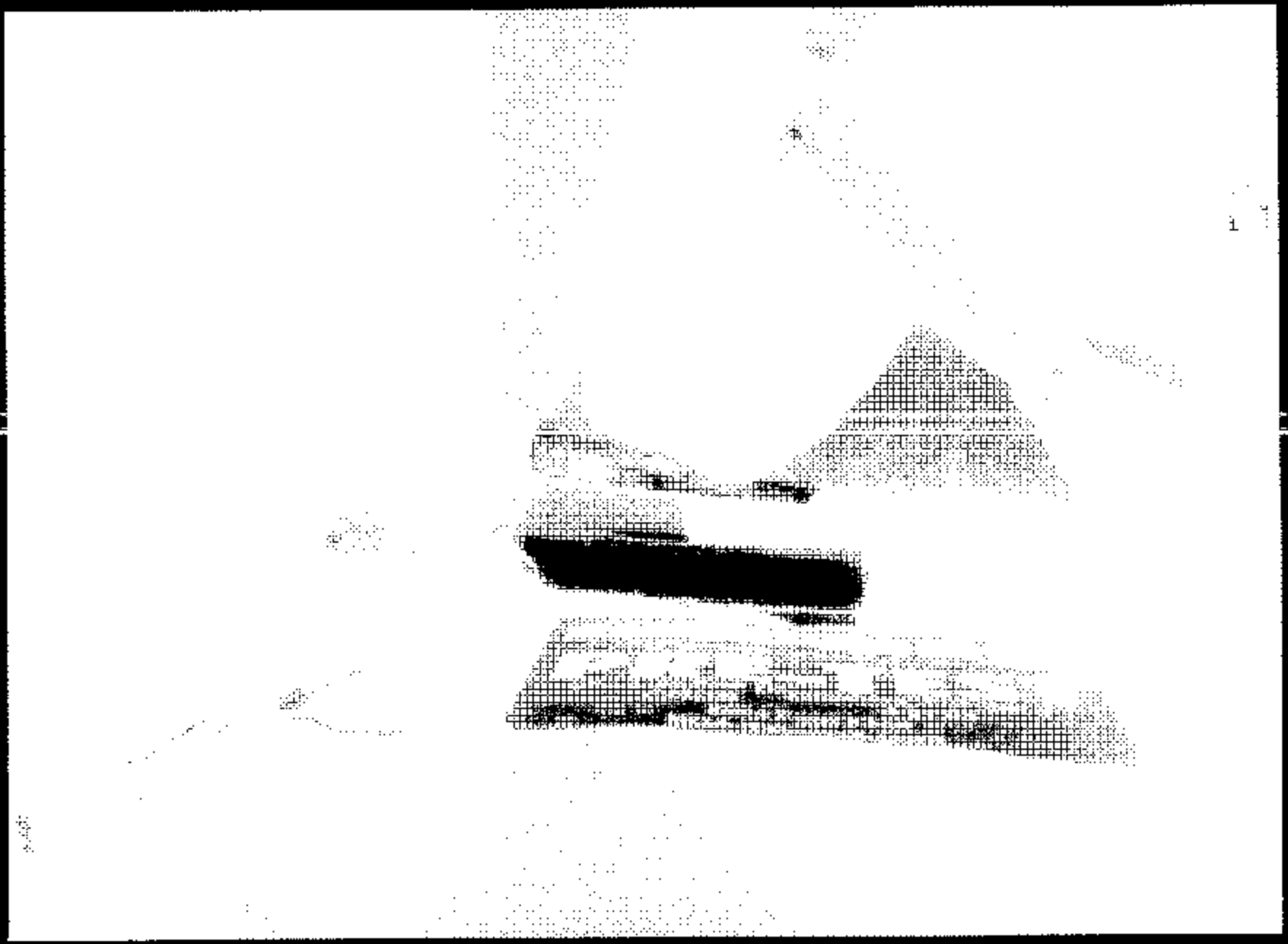
Pre-Test 5th Fem. P2 Driver Dummy Right Side Mid Position View

Pre-Test 5th Fem. P2 Driver Dummy Left Side Knee Position View



Pre-Test 5th Fem. P2 Driver Dummy Right Side Knee Position View

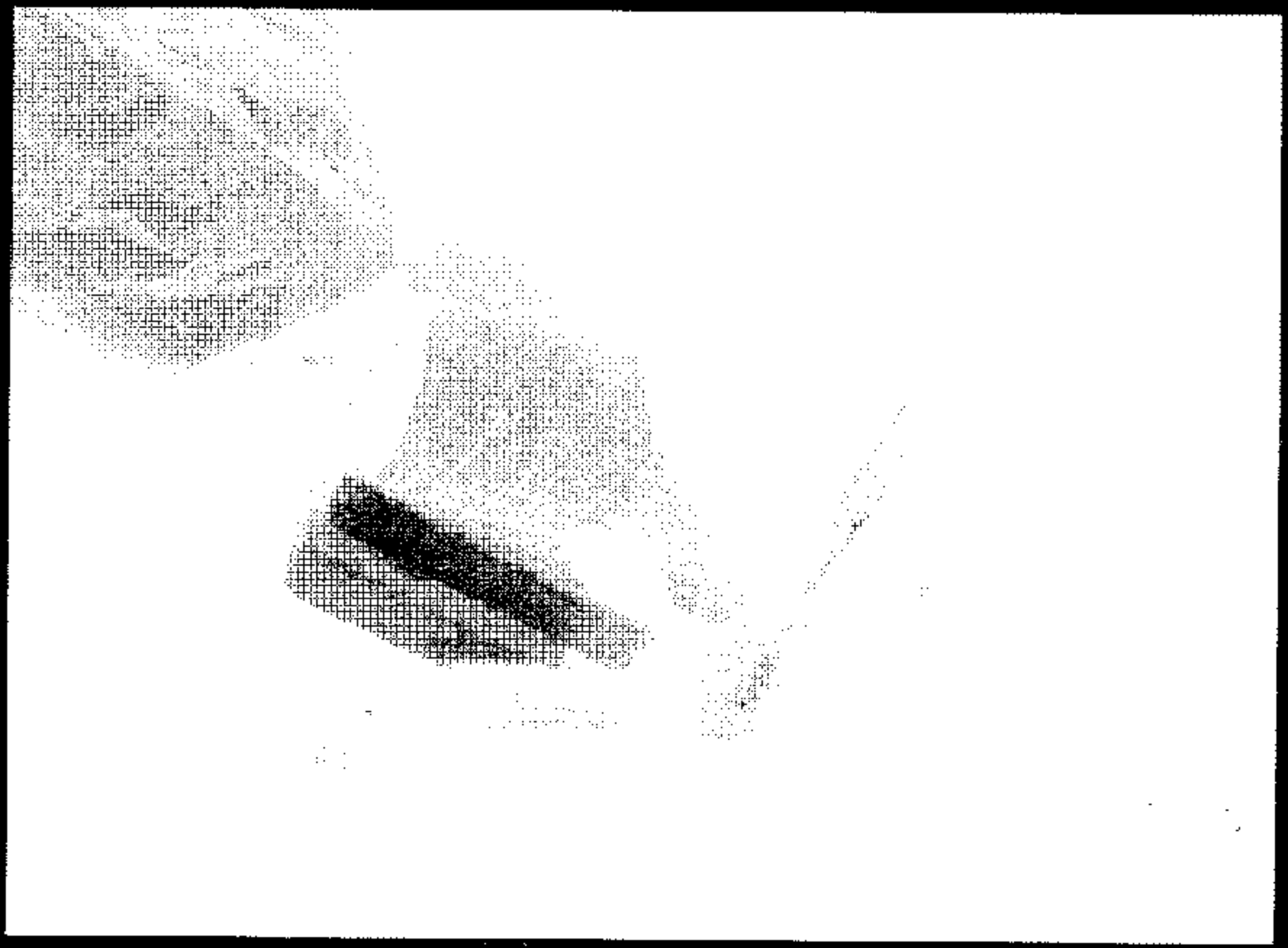
Pre-Test 5th Fem. P2 Driver Dummy Left Side Seat Position View



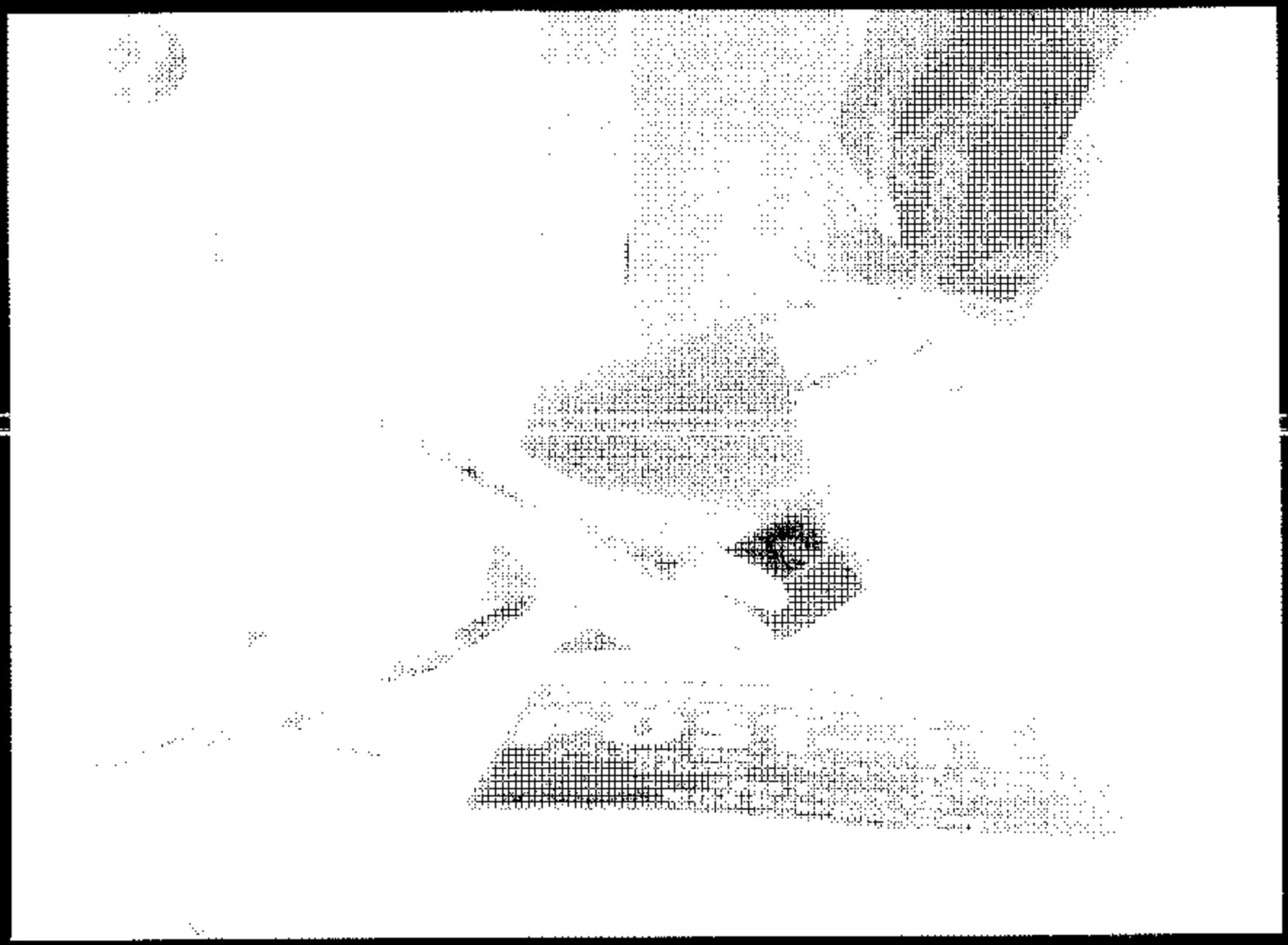
Pre-Test 5th Fem. P2 Driver Dummy Right Side Seat Position View

Post-Test 5th Fem. P2 Driver Dummy Left Side Head Contact View

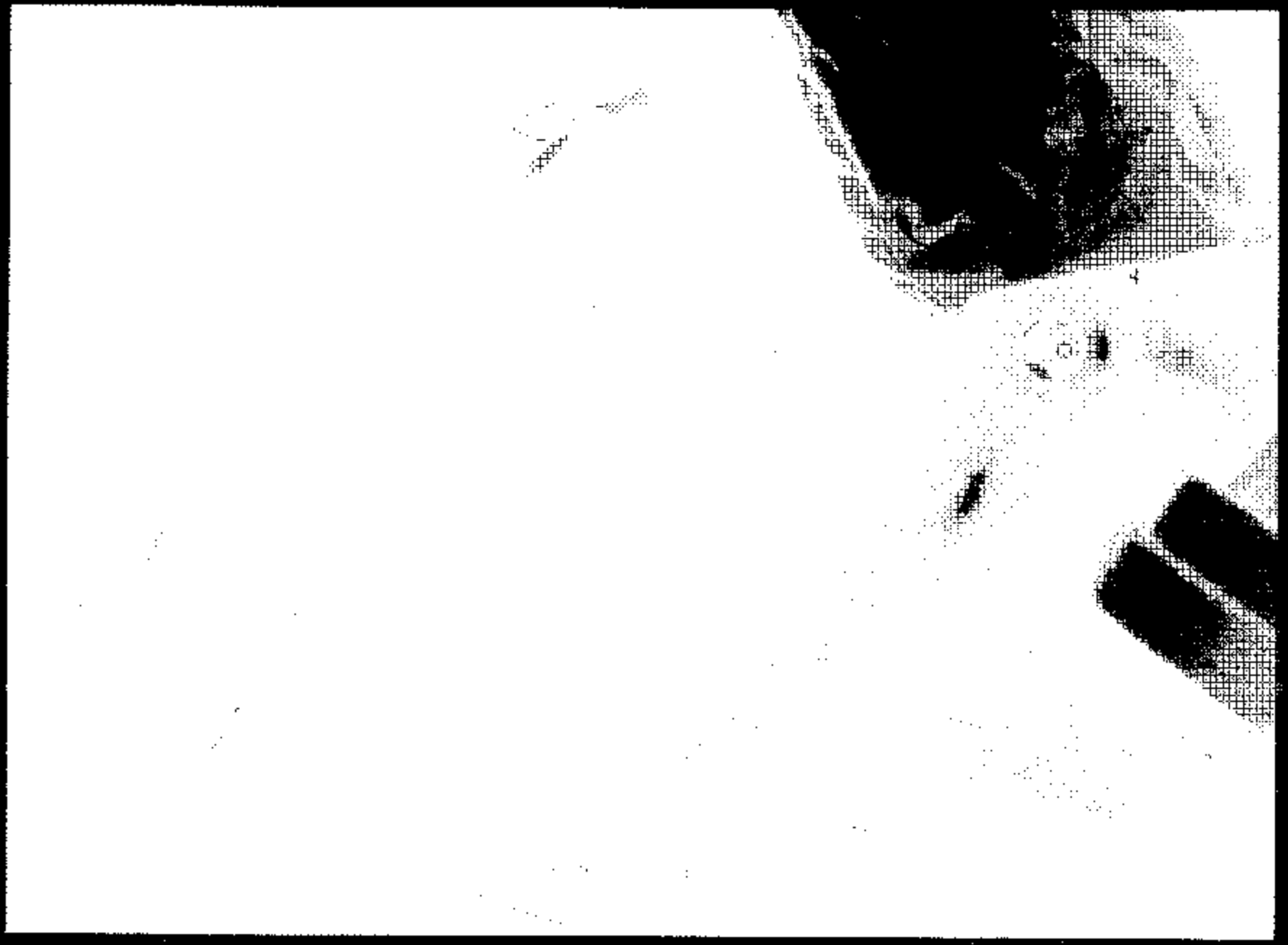
Post-Test 5th Fem. P2 Driver Dummy Right Side Head Contact View



Post-Test 5th Fem. P2 Driver Dummy Left Side Mid Position View

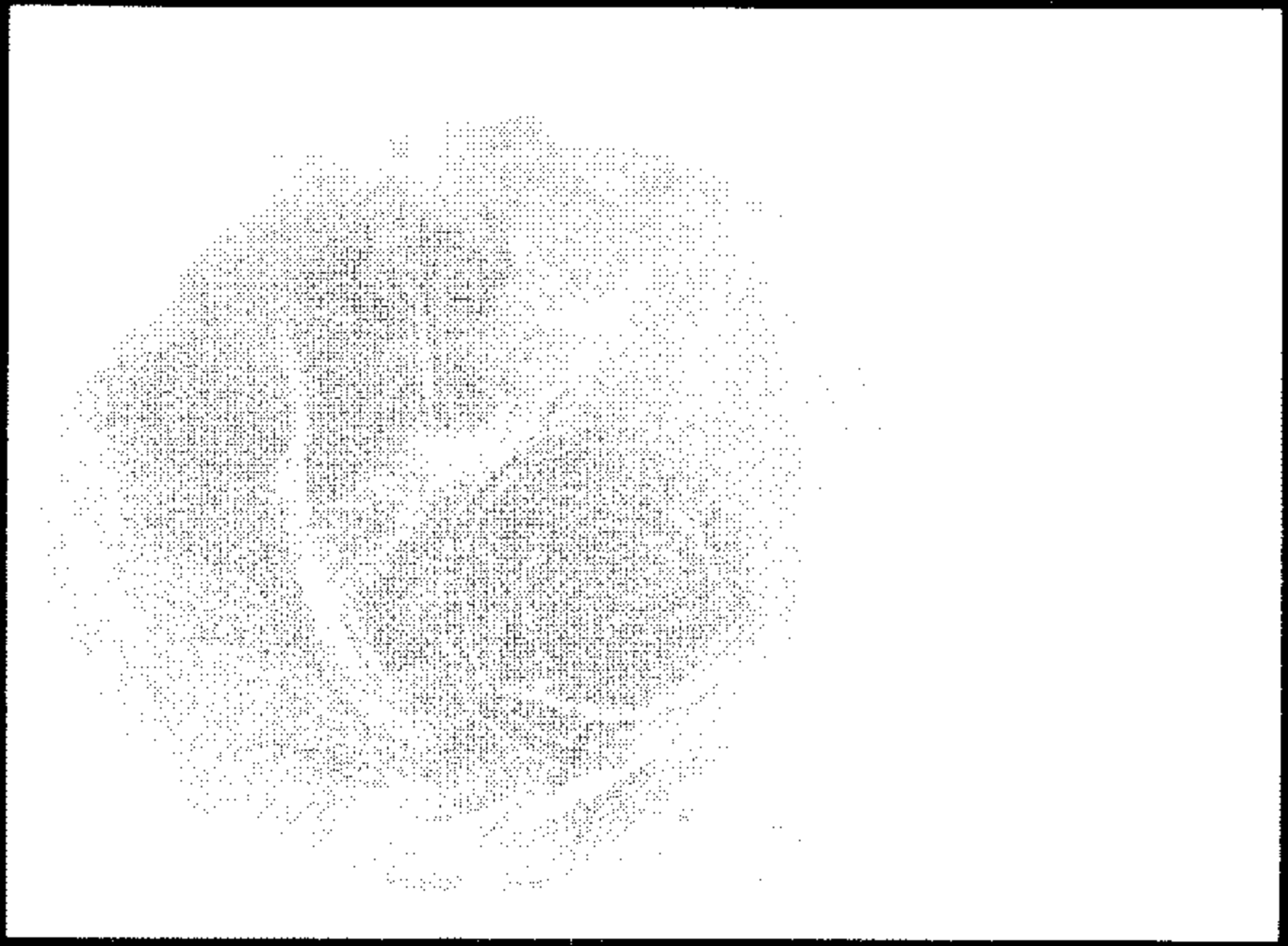


Post-Test 5th Fem. P2 Driver Dummy Right Side Mid Position View

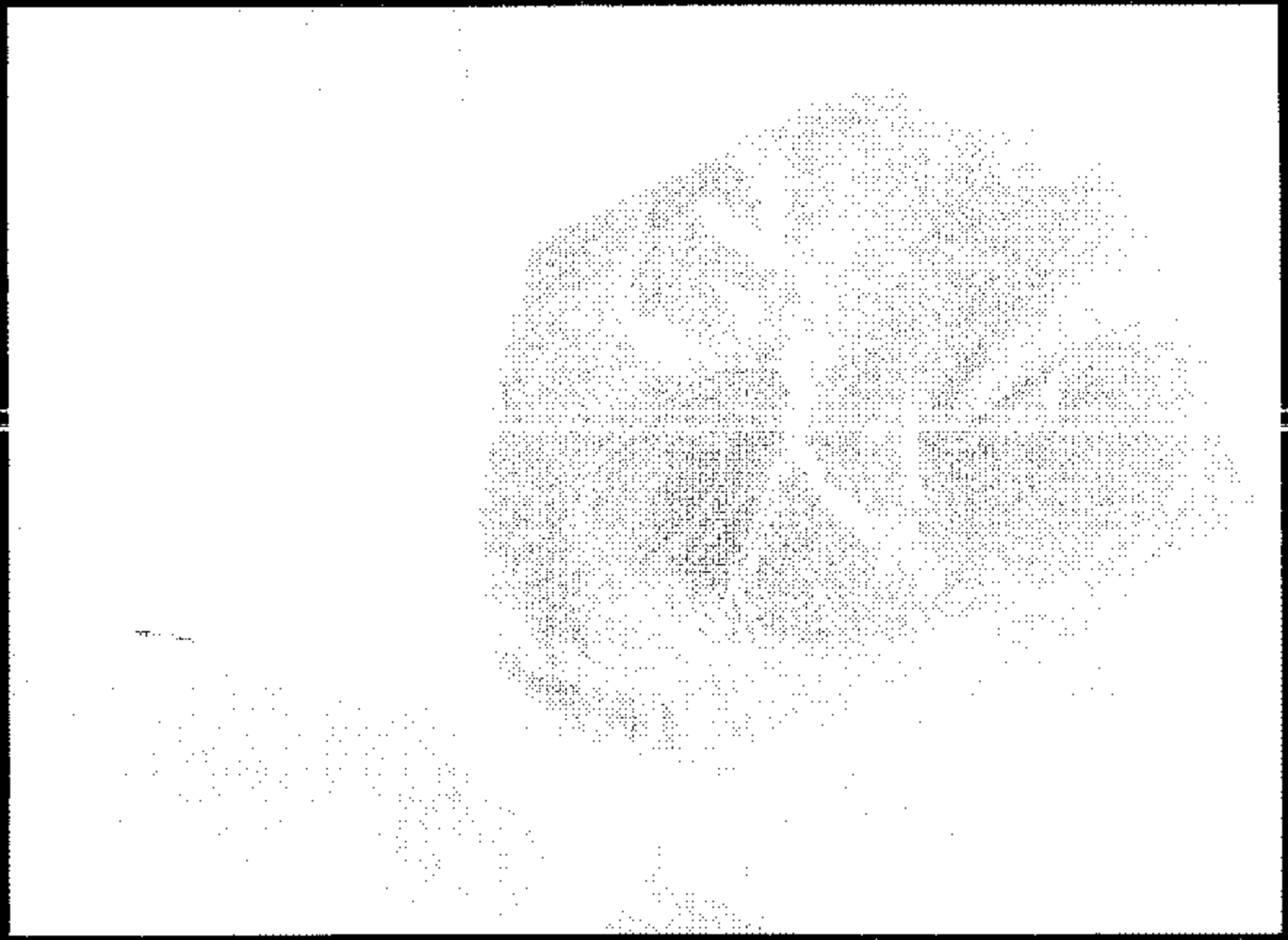


Post-Test 5th Fem. P2 Driver Dummy Left Side Knee Contact View

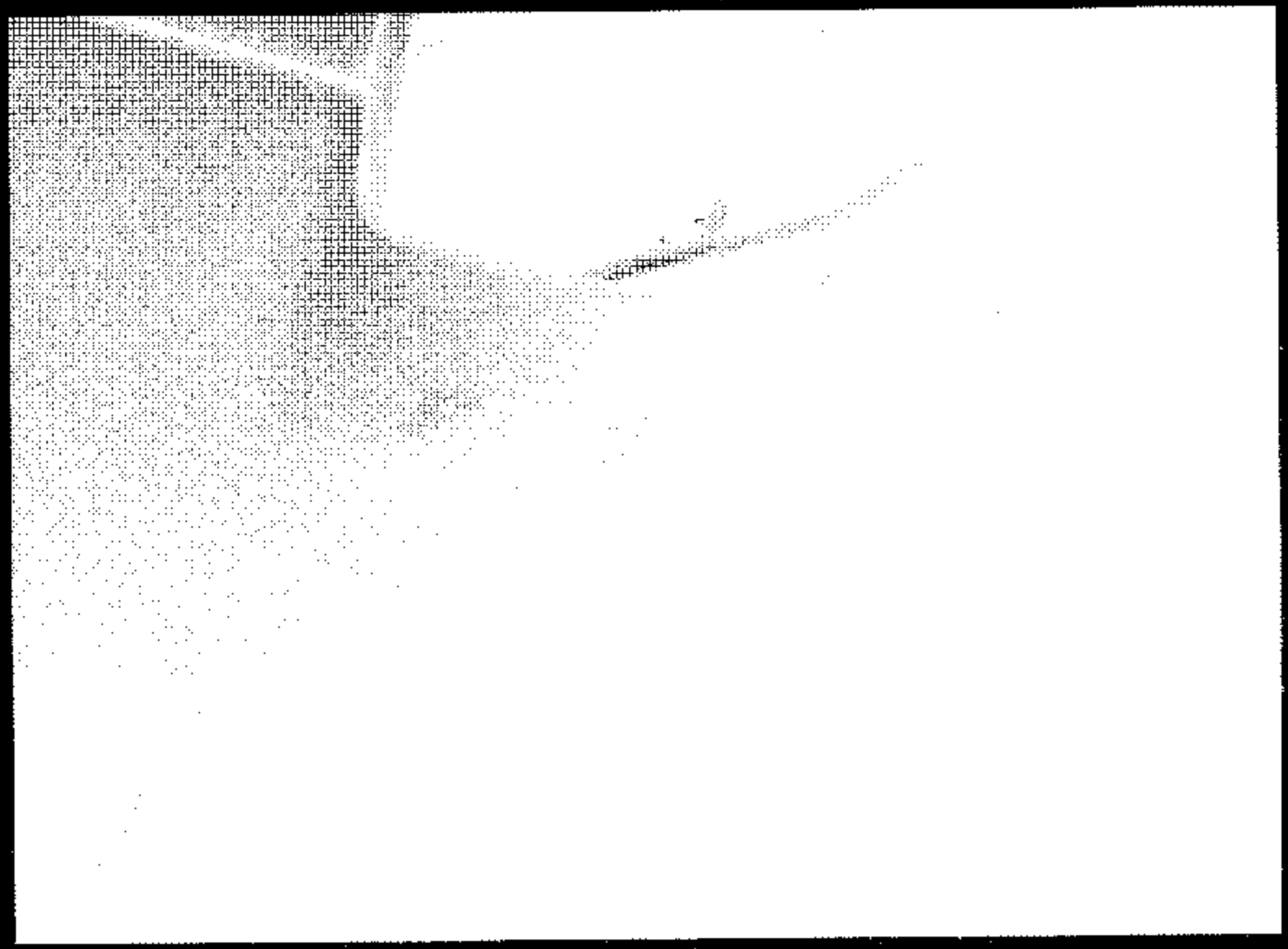
Post-Test 5th Fem. P2 Driver Dummy Right Side Knee Contact View



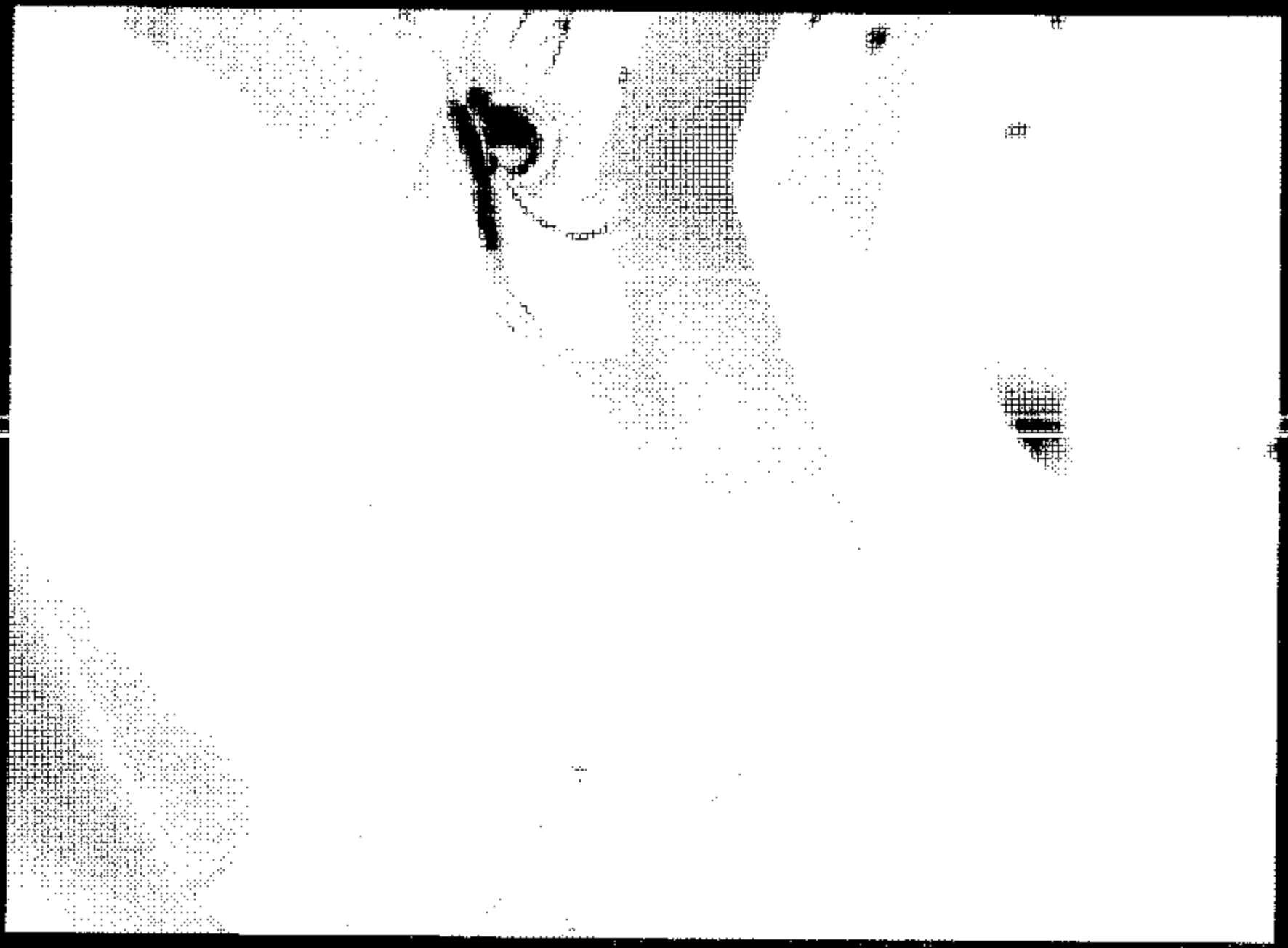
Post-Test 5th Fem. P2 Driver Dummy Airbag Left View



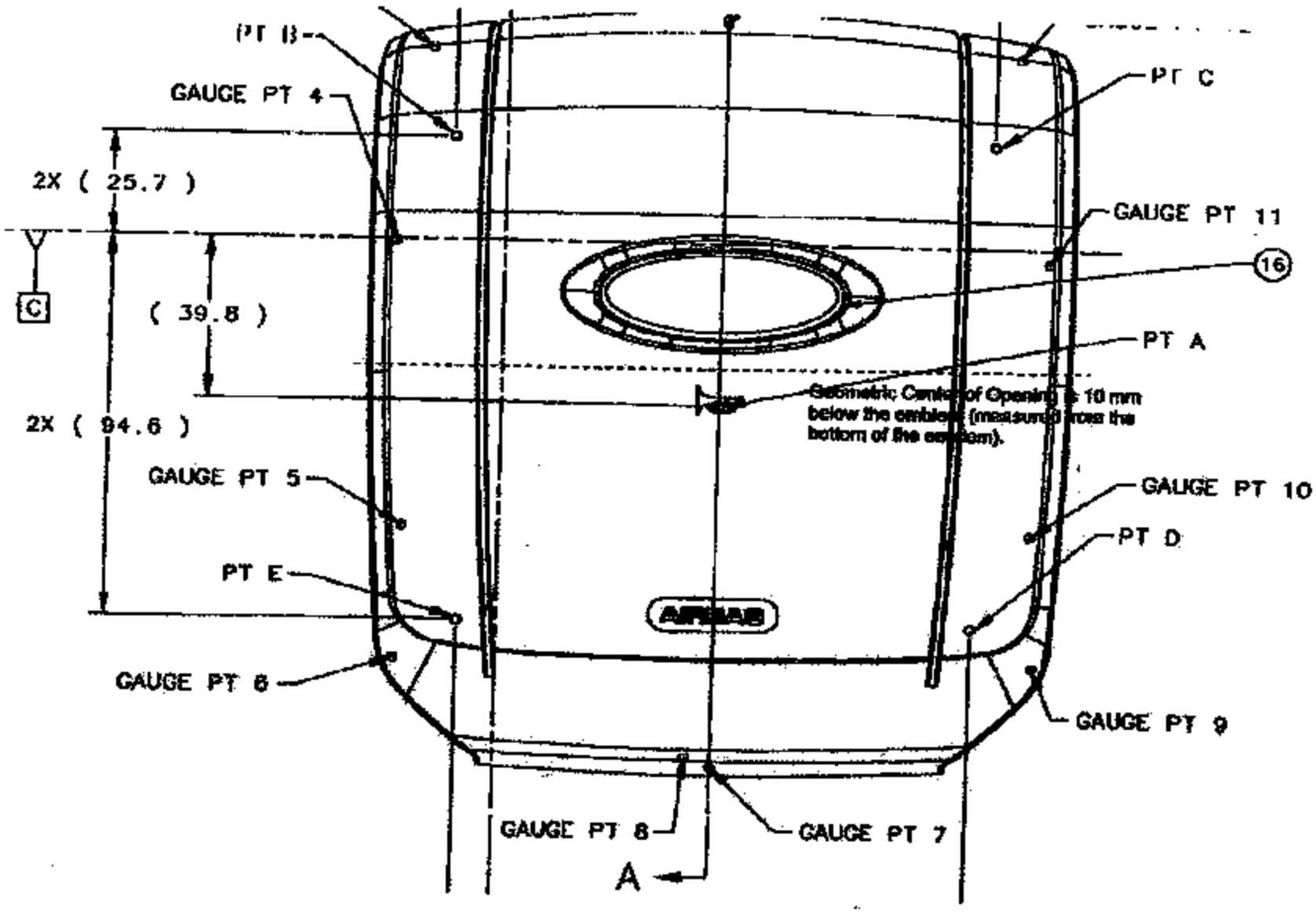
Post-Test 5th Fem. P2 Driver Dummy Airbag Right View



Post-Test 5th Fem. P2 Driver Dummy Knee Contact View



Post-Test 5th Fem. P2 Driver Dummy Knee Contact View



Geometric Center (2004 Ford F-150)

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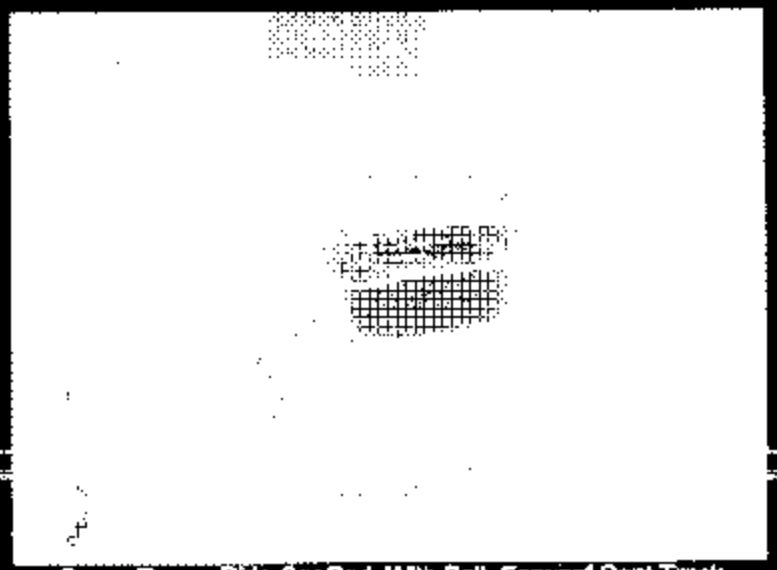
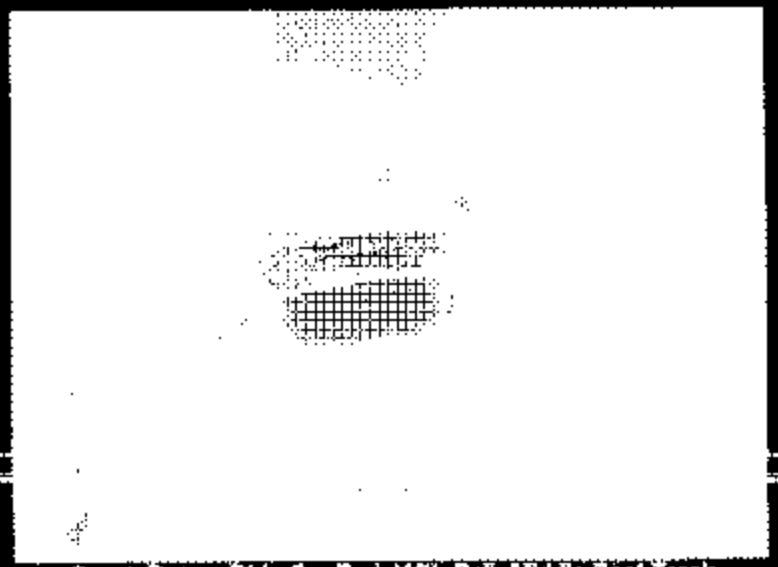
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

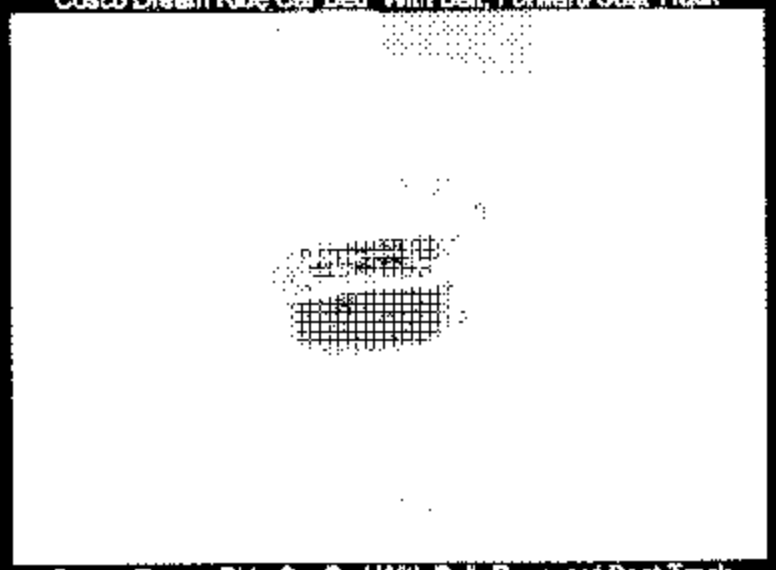
Newborn Section A Car Bed



Cosco Dream Ride Car Bed With Belt, Forward Seat Track



Cosco Dream Ride Car Bed With Belt, Middle Seat Track



Cosco Dream Ride Car Bed With Belt, Rearward Seat Track

Unbelted 5th Percentile Female Reactivation Seat, Middle Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section B Rear Facing CRS

Britax Handle With Care 191 With Belt, Forward Seat Track, Handle Down

Britax Handle With Care 191 With Belt, Middle Seat Track, Handle Down

Britax Handle With Care 191 With Belt, Rearward Seat Track, Handle Down

Britax Handle With Care 191 Unbelted, Forward Seat Track, Handle Down

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section B Rear Facing CRS

Britax Handle With Care 191 Unbelted, Middle Seat Track, Handle Down

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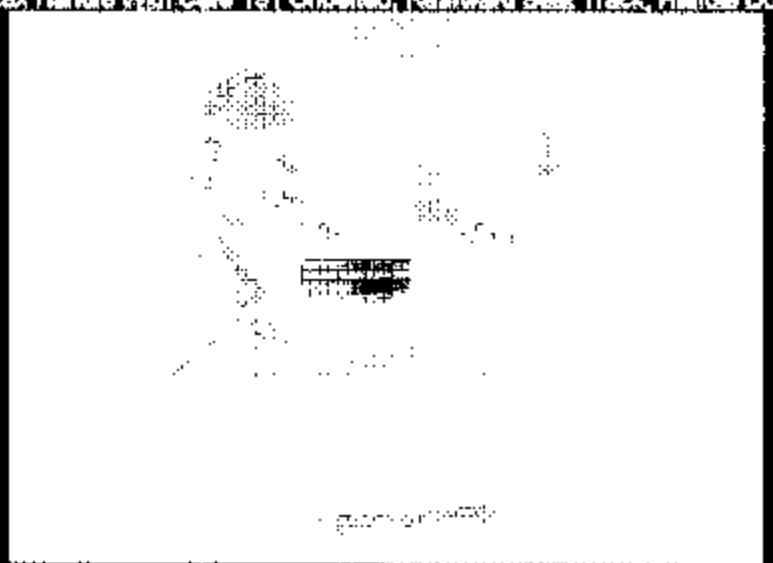
Britax Handle With Care 191 Fwd Facing Unbelted, Forward Seat Track, Handle Down



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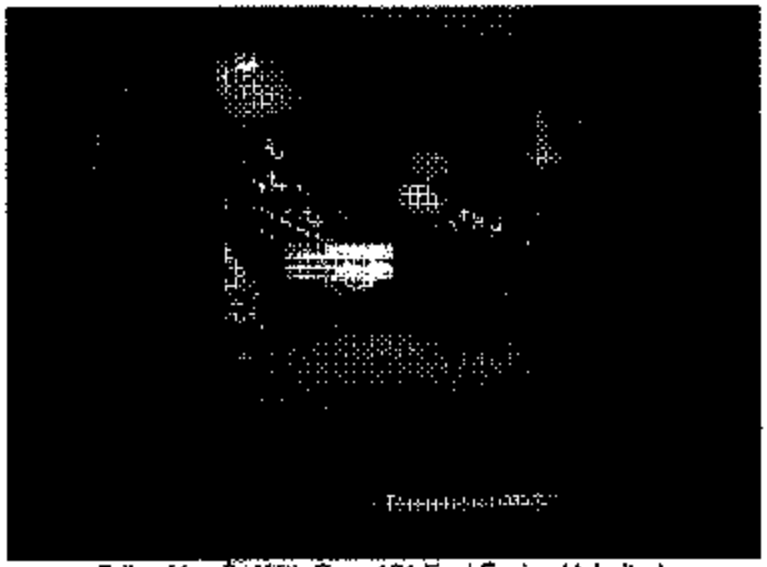
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section B Rear Facing CRS

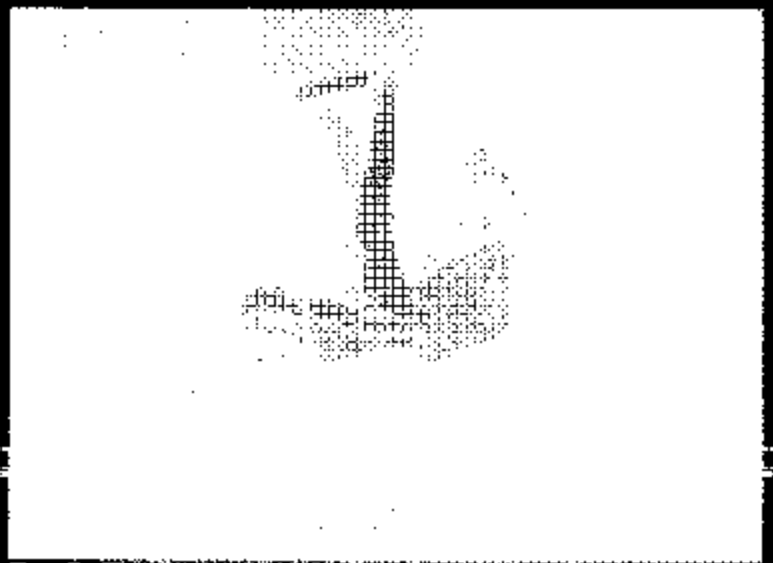


Britax Handle With Care 191 Fwd Facing Unbelted, Rearward Seat Track, Handle Down

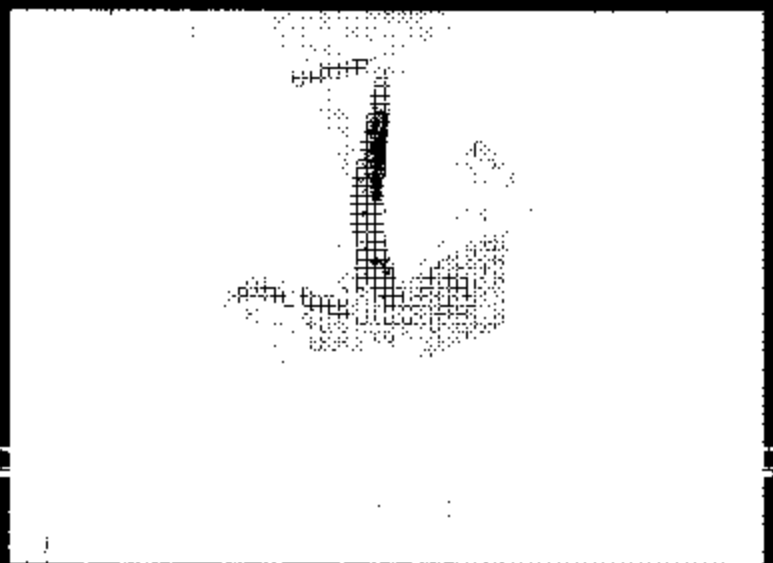
Unbelted 5th Percentile Female Reactivation Seat, Rearward Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section B Rear Facing CRS

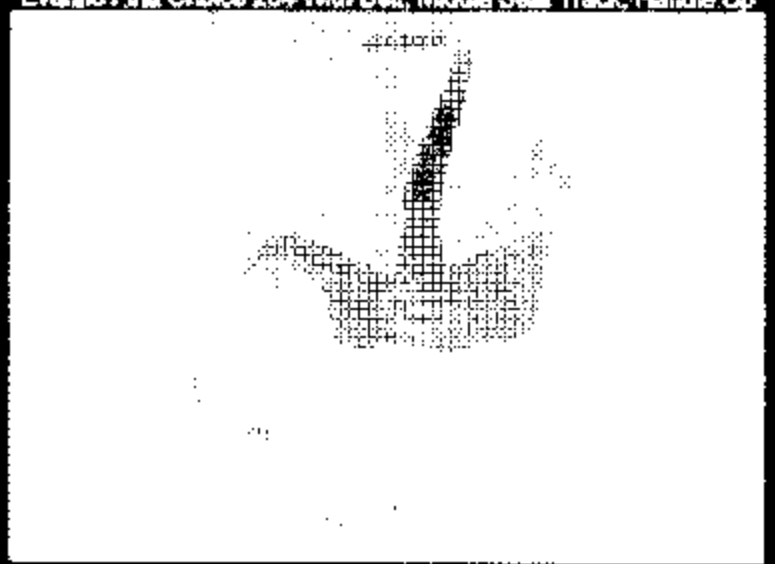


Evenflo First Choice 204 With Belt, Forward Seat Track, Handle Up



Evenflo First Choice 204 With Belt, Middle Seat Track, Handle Up

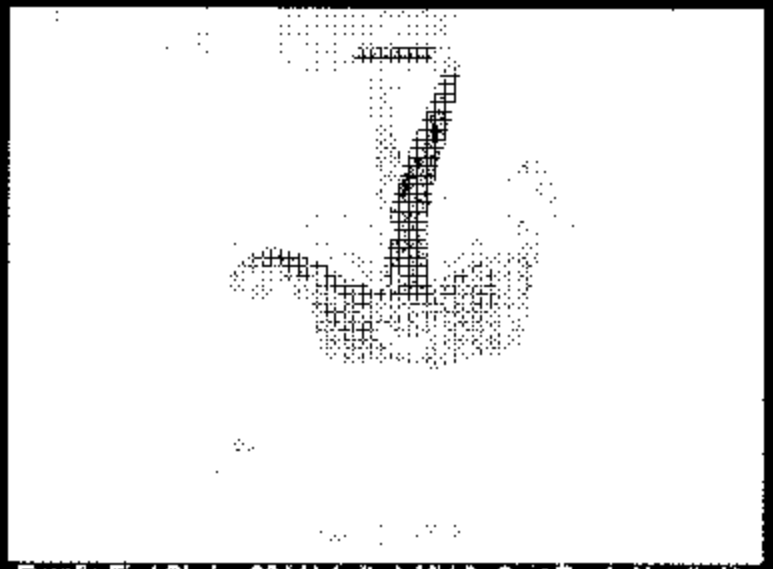
Evenflo First Choice 204 With Belt, Rearward Seat Track, Handle Down



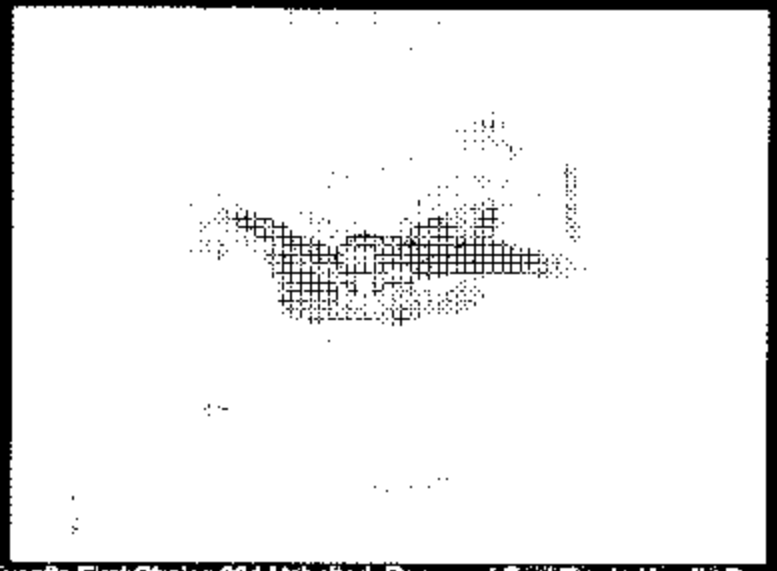
Evenflo First Choice 204 Unbelted, Forward Seat Track, Handle Up

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

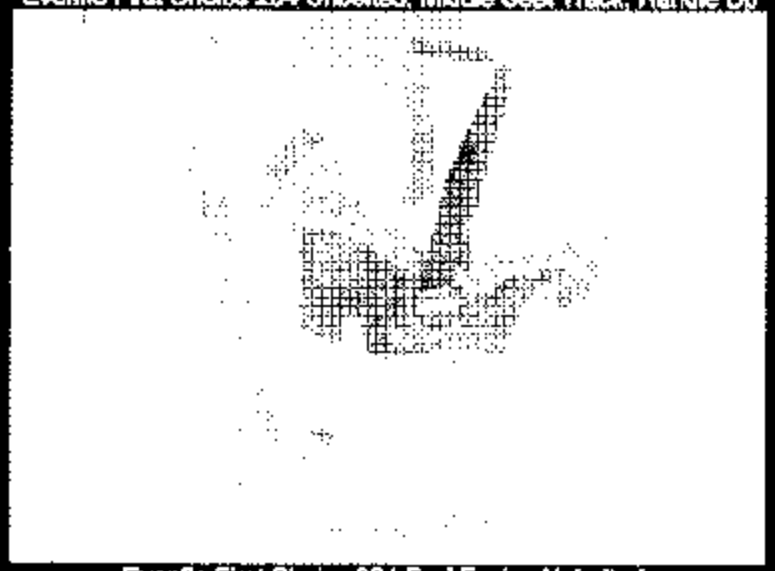
12 Month Section B Rear Facing CRS



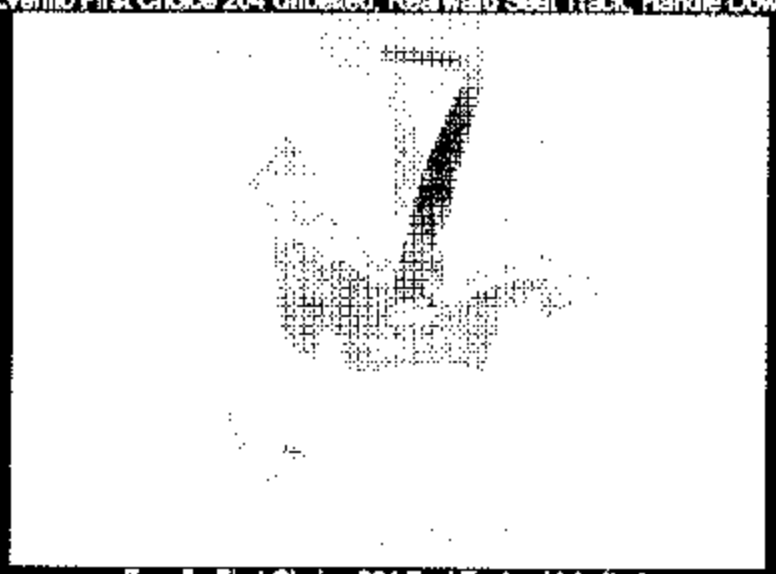
Evenflo First Choice 204 Unbelted, Middle Seat Track, Handle Up



Evenflo First Choice 204 Unbelted, Rearward Seat Track, Handle Down



Evenflo First Choice 204 Fwd Facing Unbelted, Forward Seat Track, Handle Up



Evenflo First Choice 204 Fwd Facing Unbelted, Middle Seat Track, Handle Up

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section B Rear Facing CRS

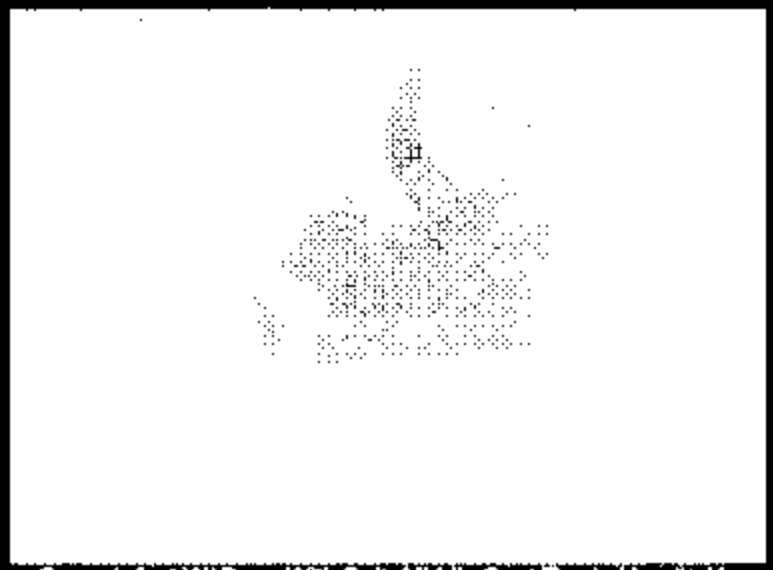
Evenflo First Choice 204 Fwd Facing Unbelted, Rearward Seat Track, Handle Up

Unbelted 5th Percentile Female Reactivation Seat, Middle Seat Track

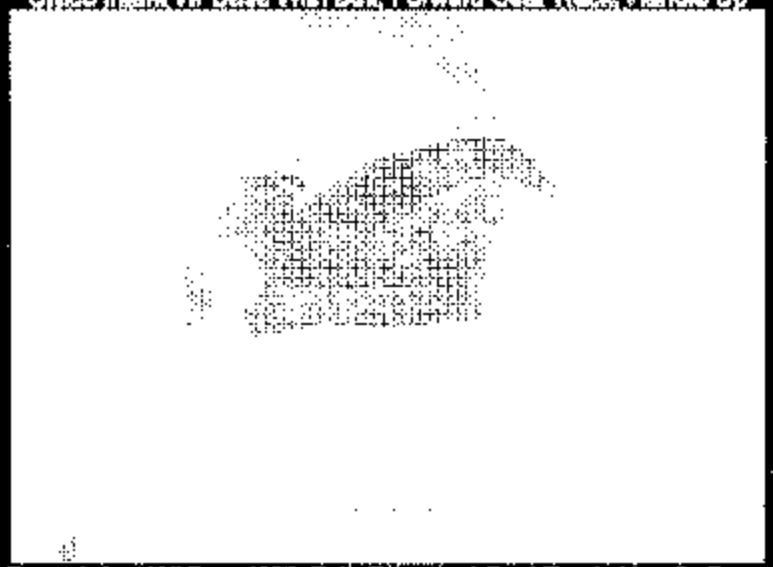
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section 8 Rear Facing CRS

Graco Infant W/ Base With Belt, Forward Seat Track, Handle Up



Graco Infant W/ Base With Belt, Middle Seat Track, Handle Up



Graco Infant W/ Base With Belt, Rearward Seat Track, Handle Down

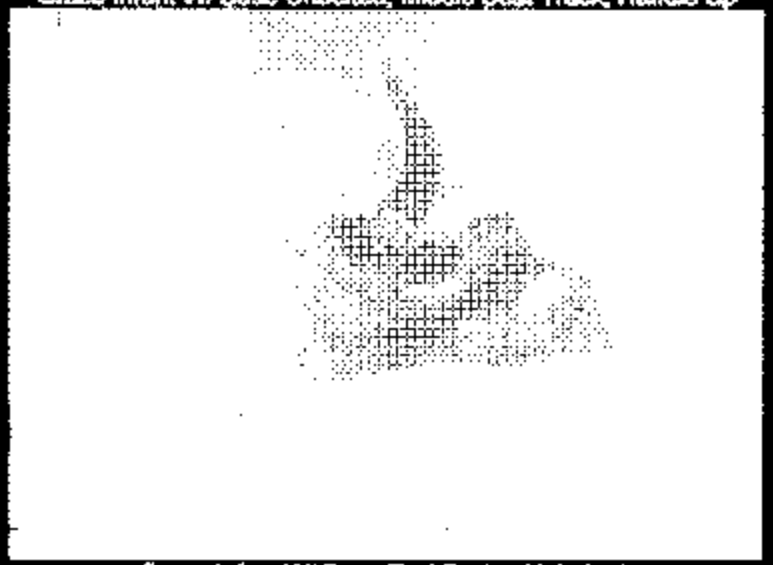
Graco Infant W/ Base Unbelted, Forward Seat Track, Handle Up

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

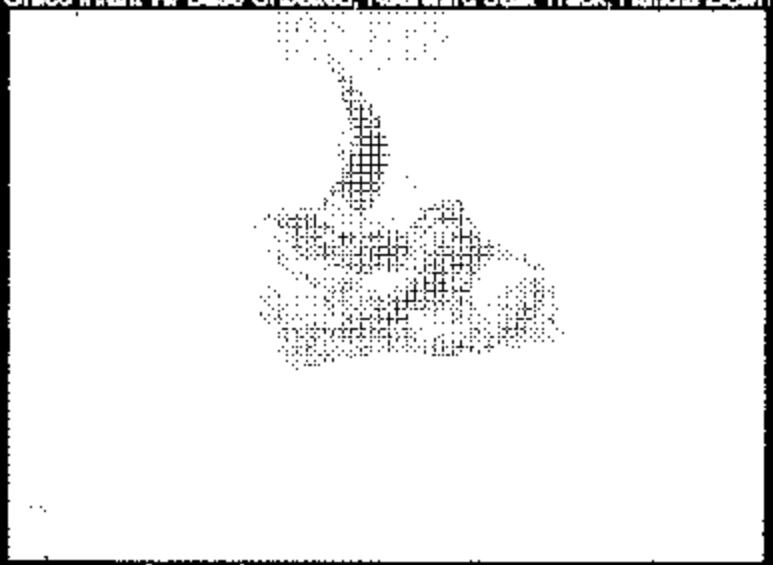
12 Month Section B Rear Facing CRS

Graco Infant W/ Base Unbelted, Middle Seat Track, Handle Up

Graco Infant W/ Base Unbelted, Rearward Seat Track, Handle Down



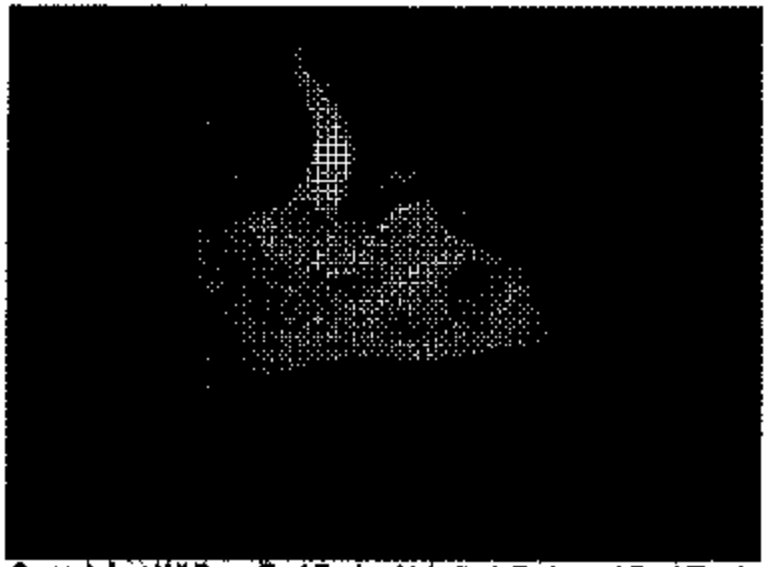
Graco Infant W/ Base Fwd Facing Unbelted, Forward Seat Track, Handle Up



Graco Infant W/ Base Fwd Facing Unbelted, Middle Seat Track, Handle Up

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section B Rear Facing CRS



Graco Infant W/ Base Fwd Facing Unbelted, Rearward Seat Track, Handle Up

Photo Not Available

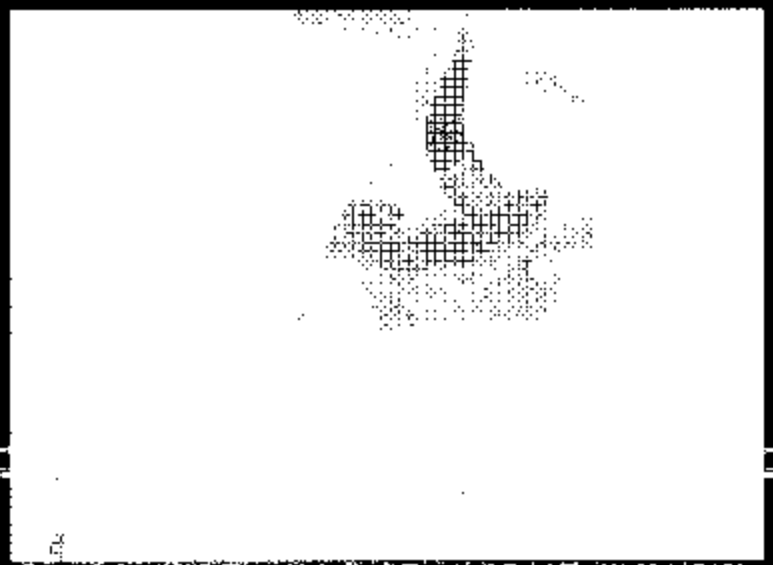
Graco Infant W/O Base With Belt, Forward Seat Track, Handle Up

Graco Infant W/O Base With Belt, Middle Seat Track, Handle Up

Graco Infant W/O Base With Belt, Rearward Seat Track, Handle Down

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

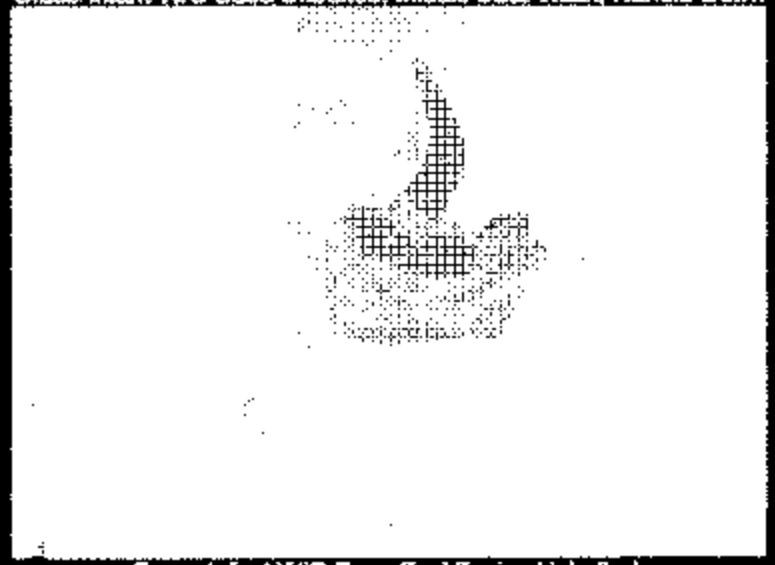
12 Month Section B Rear Facing CRS



Graco Infant W/O Base Unbelted, Forward Seat Track, Handle Up

Graco Infant W/O Base Unbelted, Middle Seat Track, Handle Down

Graco Infant W/O Base Unbelted,
Rearward Seat Track, Handle Down

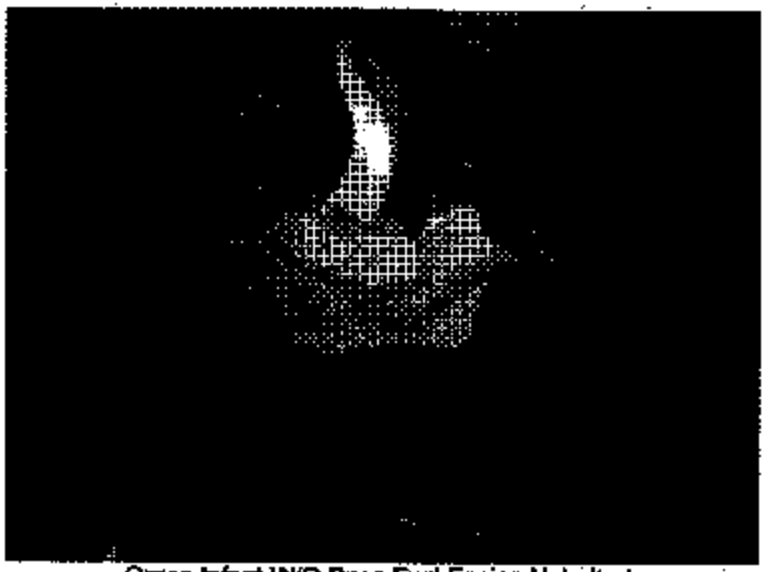


Graco Infant W/O Base Fwd Facing Unbelted,
Forward Seat Track, Handle Up

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section B Rear Facing CRS

Graco Infant W/O Base Fwd Facing Unbelted, Middle Seat Track, Handle Up



Graco Infant W/O Base Fwd Facing Unbelted, Rearward Seat Track, Handle Up

Unbelted 5th Percentile Female Reactivation Seat, Forward Seat Track

Britax Roundabout 161 Fwd Facing With Belt, Forward Seat Track

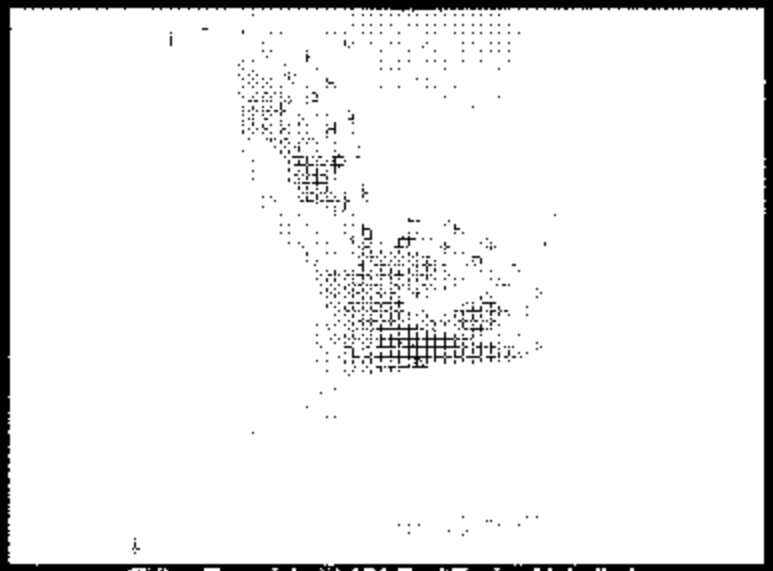
Britax Roundabout 161 Fwd Facing With Belt, Middle Seat Track

Britax Roundabout 161 Fwd Facing With Belt, Rearward Seat Track

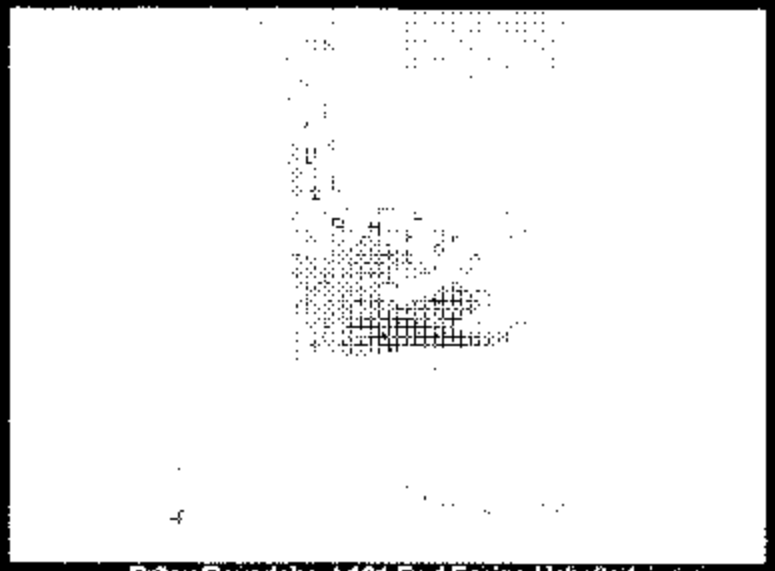
Britax Roundabout 161 Fwd Facing Unbelted, Forward Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section C Forward Facing Convertible CRS



Britax Roundabout 161 Fwd Facing Unbelted, Middle Seat Track



Britax Roundabout 161 Fwd Facing Unbelted, Rearward Seat Track

Britax Roundabout 161 Rear Facing With Belt, Forward Seat Track

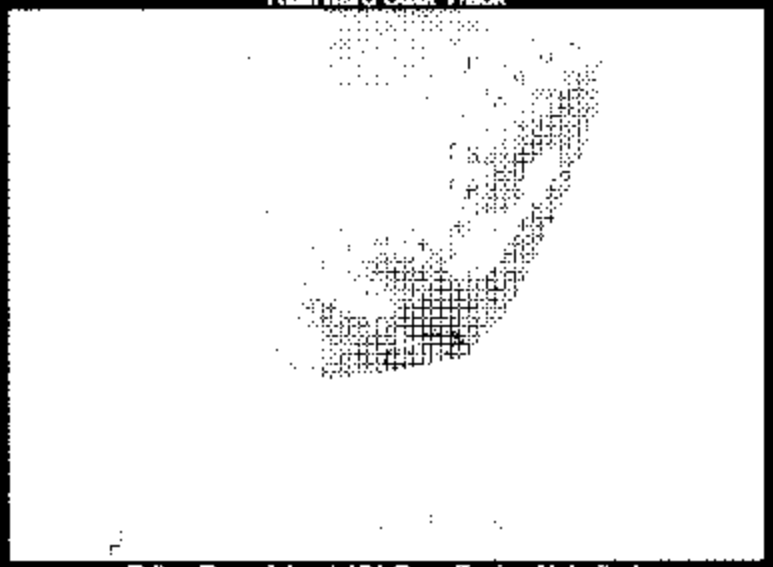
Britax Roundabout 161 Rear Facing With Belt, Middle Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

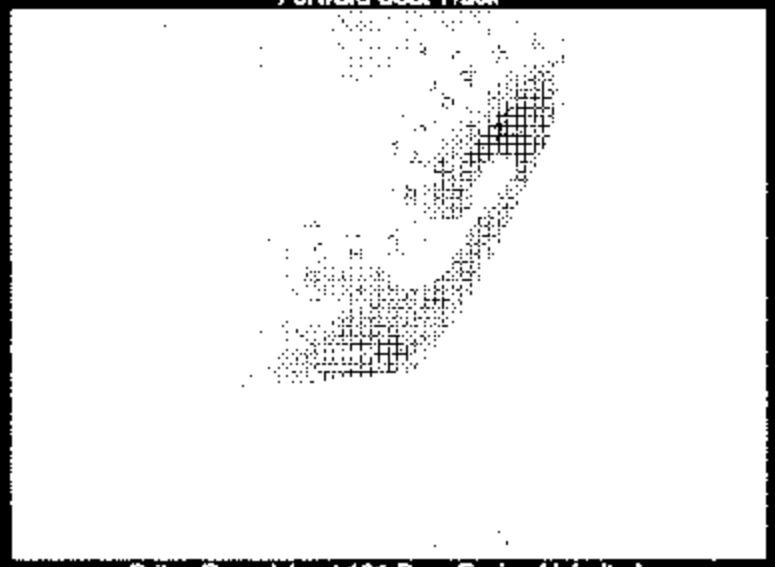
12 Month Section C Forward Facing Convertible CRS

Britax Roundabout 161 Rear Facing With Belt, Rearward Seat Track

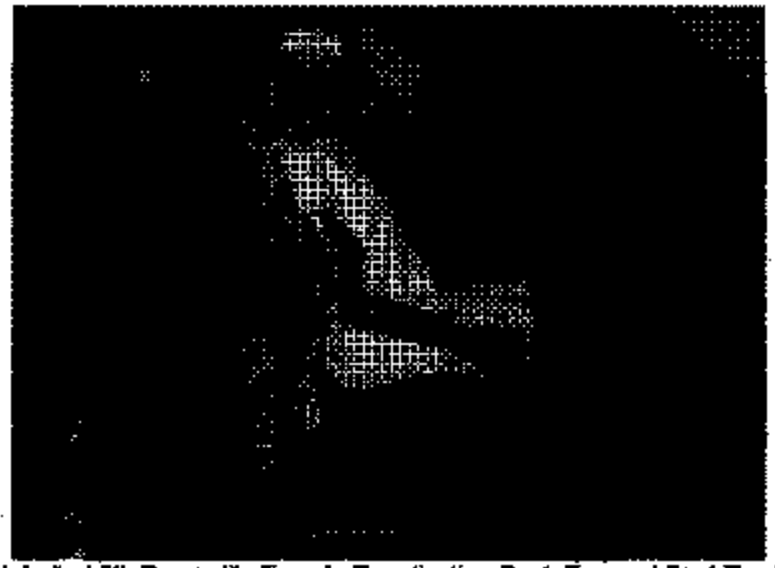
Britax Roundabout 161 Rear Facing Unbelted, Forward Seat Track



Britax Roundabout 161 Rear Facing Unbelted, Middle Seat Track



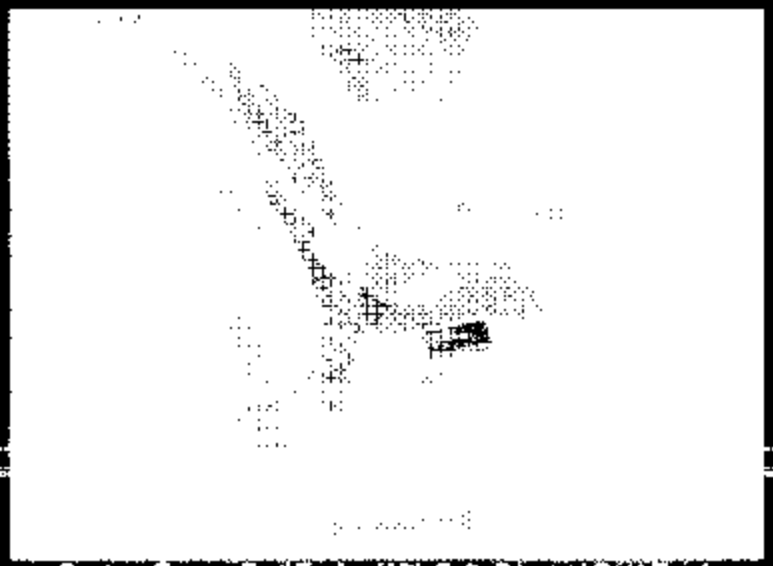
Britax Roundabout 161 Rear Facing Unbelted, Rearward Seat Track



Unbelted 5th Percentile Female Reactivation Seat, Forward Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section C Forward Facing Convertible CRS



Century Encore Fwd Facing With Belt, Forward Seat Track

Century Encore Fwd Facing With Belt, Middle Seat Track

Century Encore Fwd Facing With Belt, Rearward Seat Track

Century Encore Fwd Facing Unbelted, Forward Seat Track

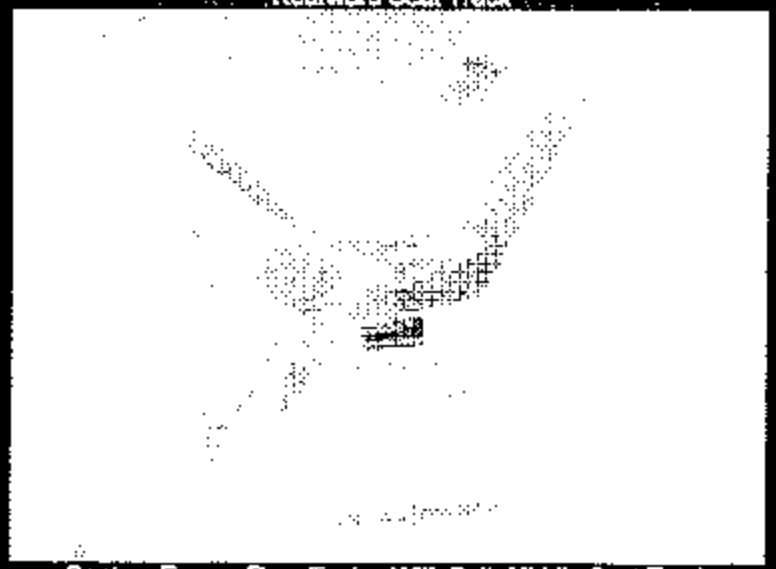
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section C Forward Facing Convertible CRS

Century Encore Fwd Facing Unbelted, Middle Seat Track

Century Encore Fwd Facing Unbelted, Rearward Seat Track

Century Encore Rear Facing With Belt, Forward Seat Track



Century Encore Rear Facing With Belt, Middle Seat Track

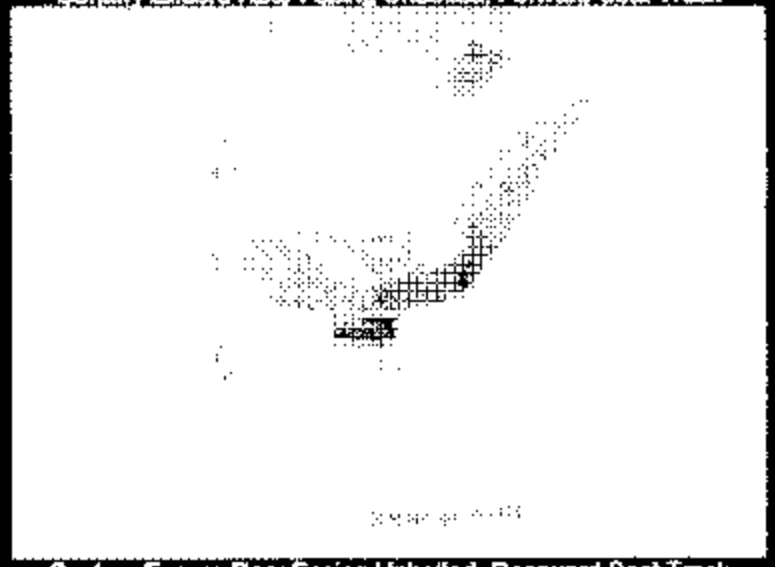
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section C Forward Facing Convertible CRS

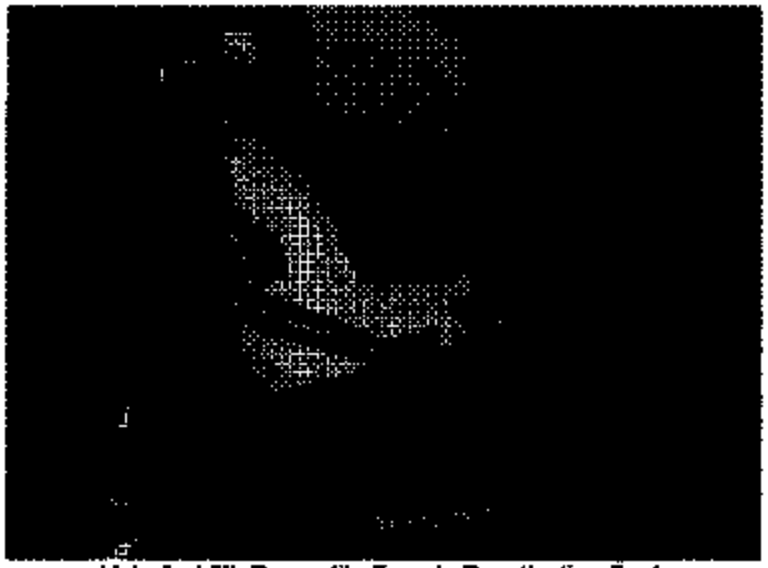
Century Encore Rear Facing With Belt, Rearward Seat Track

Century Encore Rear Facing Unbelted, Forward Seat Track

Century Encore Rear Facing Unbelted, Middle Seat Track



Century Encore Rear Facing Unbelted, Rearward Seat Track



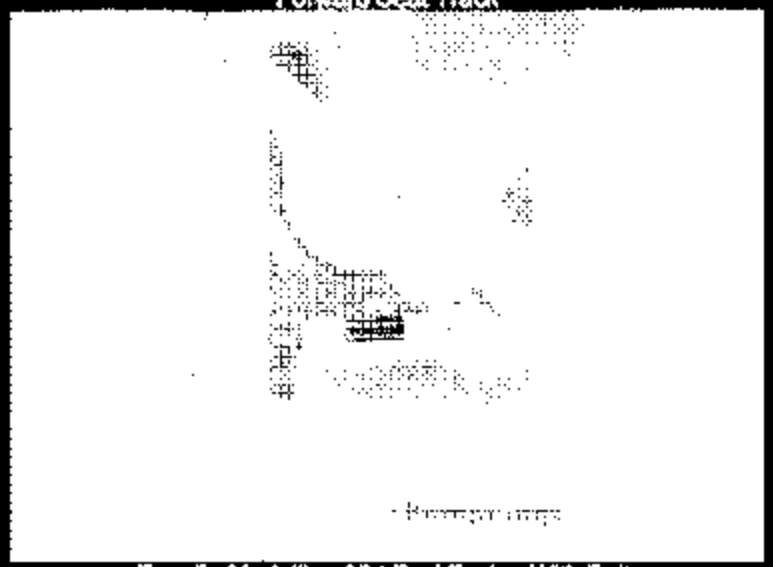
Unbelted 5th Percentile Female Reactivation Seat,
Rearward Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section C Forward Facing Convertible CRS

Evenflo Medallion 254 Fwd Facing With Belt, Forward Seat Track

Evenflo Medallion 254 Fwd Facing With Belt, Middle Seat Track



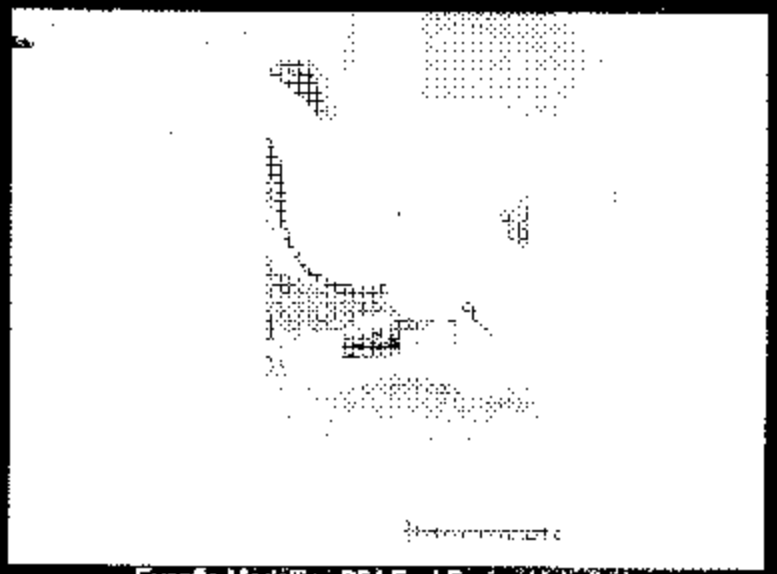
Evenflo Medallion 254 Fwd Facing With Belt, Rearward Seat Track

Evenflo Medallion 254 Fwd Facing Unbelted, Forward Seat Track

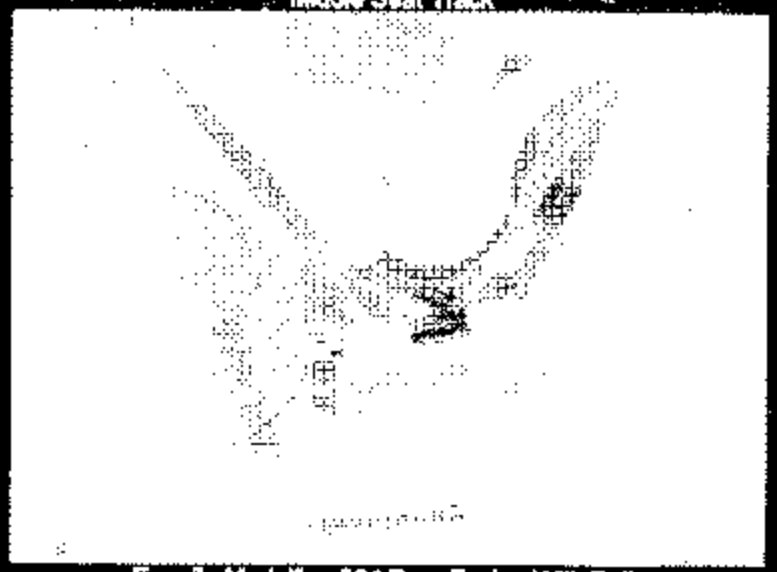
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section C Forward Facing Convertible CRS

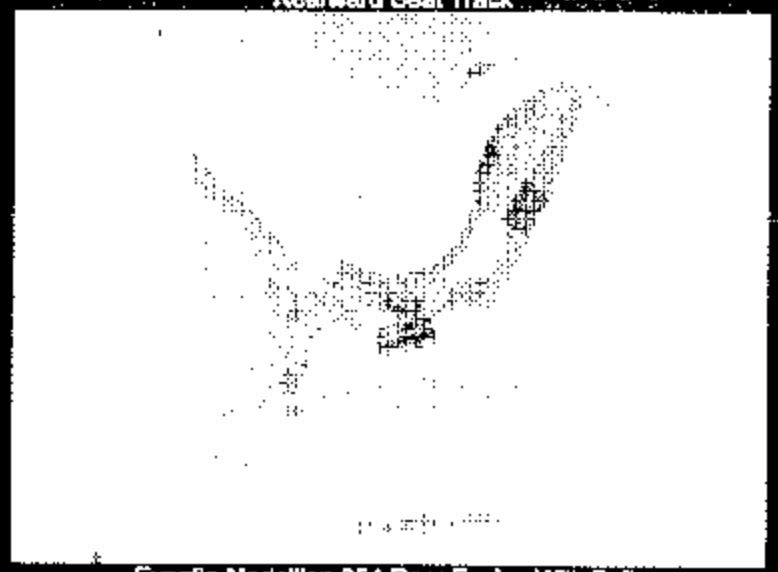
Evenflo Medallion 254 Fwd Facing Unbelted, Middle Seat Track



Evenflo Medallion 254 Fwd Facing Unbelted, Rearward Seat Track



Evenflo Medallion 254 Rear Facing With Belt, Forward Seat Track



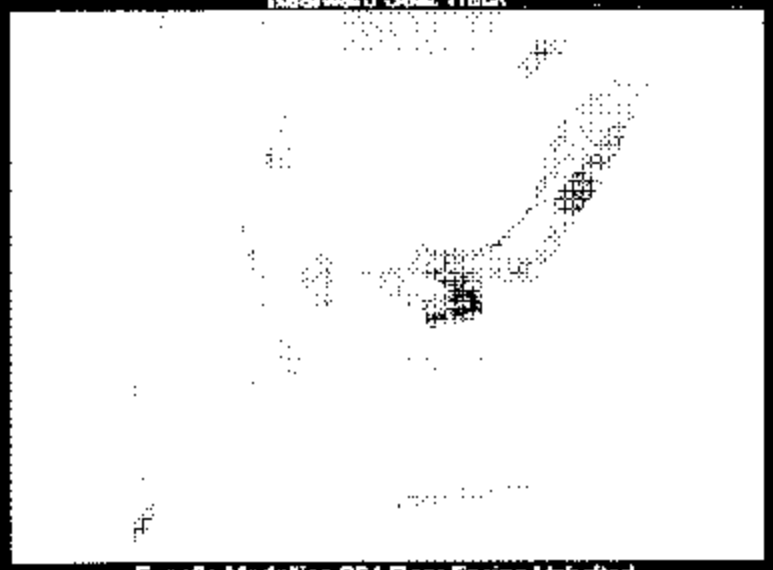
Evenflo Medallion 254 Rear Facing With Belt, Middle Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

12 Month Section C Forward Facing Convertible CRS

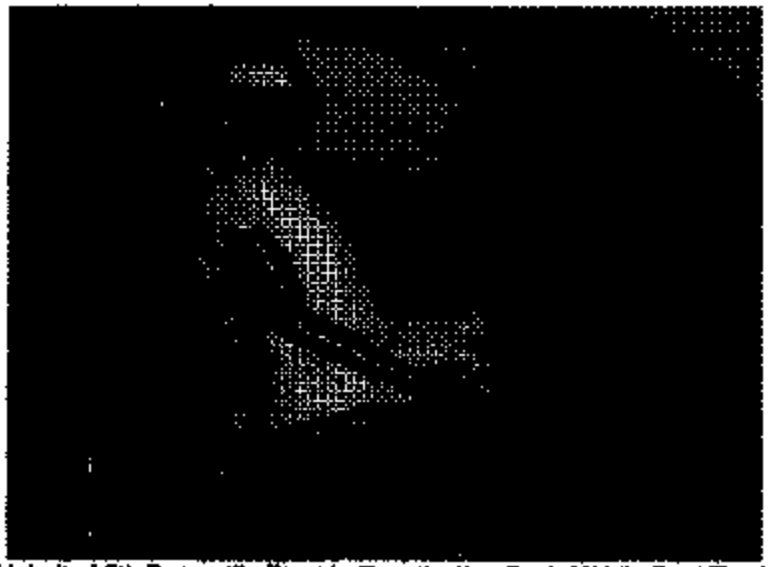
Evenflo Medallion 254 Rear Facing With Belt, Rearward Seat Track

Evenflo Medallion 254 Rear Facing Unbelted, Forward Seat Track



Evenflo Medallion 254 Rear Facing Unbelted, Middle Seat Track

Evenflo Medallion 254 Rear Facing Unbelted, Rearward Seat Track

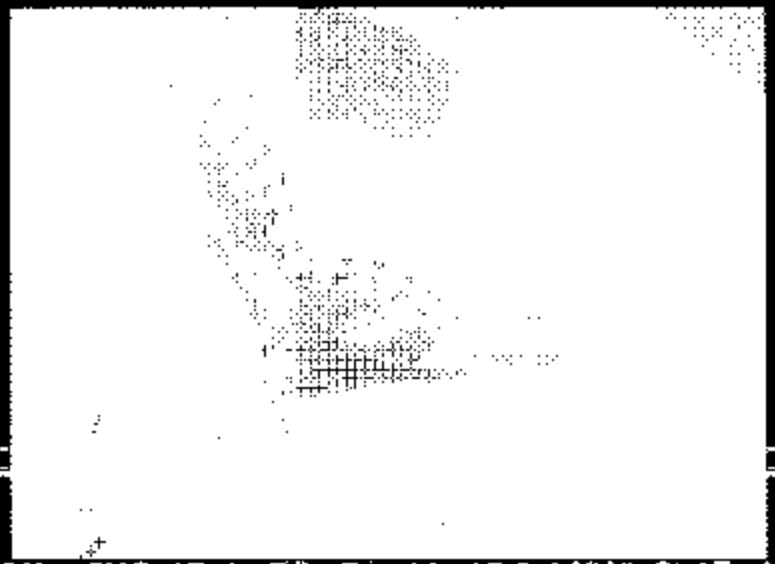


Unbelted 5th Percentile Female Reactivation Seat, Middle Seat Track

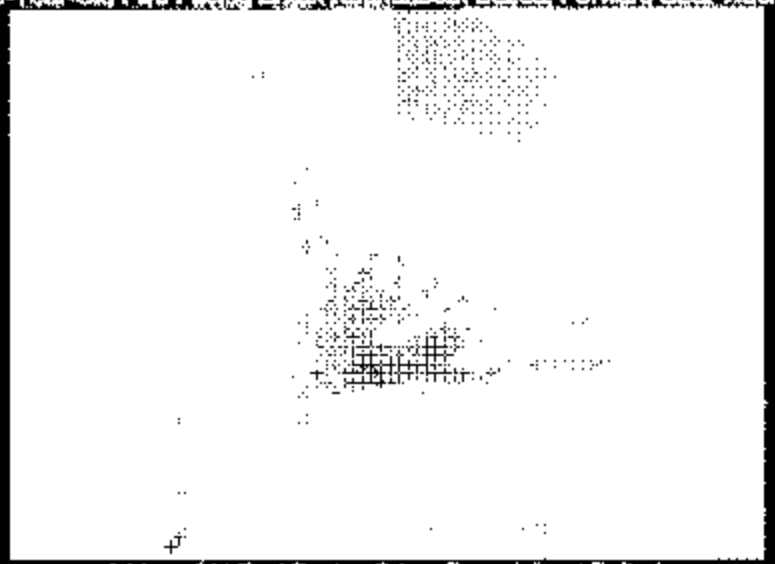
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

3 Year Old | Section C | Forward Facing Convertible CRS

3-Year-Old Fwd Facing Britax Roundabout Belted, Forward Seat Track



3-Year-Old Fwd Facing Britax Roundabout Belted, Middle Seat Track



3-Year-Old Fwd Facing Britax Roundabout Belted, Rearward Seat Track

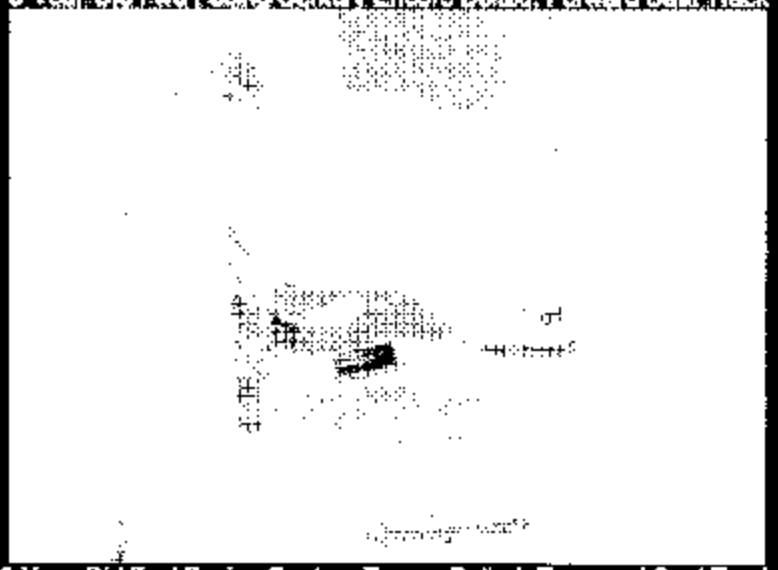
Unbelted 5th Percentile Female Reactivation Seat, Rearward Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

3 Year Old Section C Forward Facing Convertible CRS

3-Year-Old Fwd Facing Century Encore Belted, Forward Seat Track

3-Year-Old Fwd Facing Century Encore Belted, Middle Seat Track



3-Year-Old Fwd Facing Century Encore Belted, Rearward Seat Track

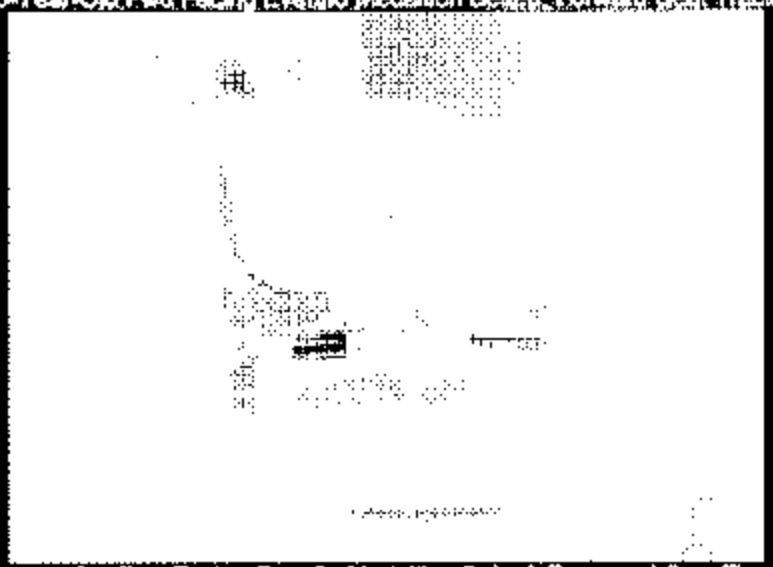
Unbelted 6th Percentile Female Reactivation Seat, Middle Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

3 Year Old | Section C | Forward Facing Convertible CRS

3-Year-Old Fwd Facing Evenflo Medallion Belted, Forward Seat Track

3-Year-Old Fwd Facing Evenflo Medallion Belted, Middle Seat Track



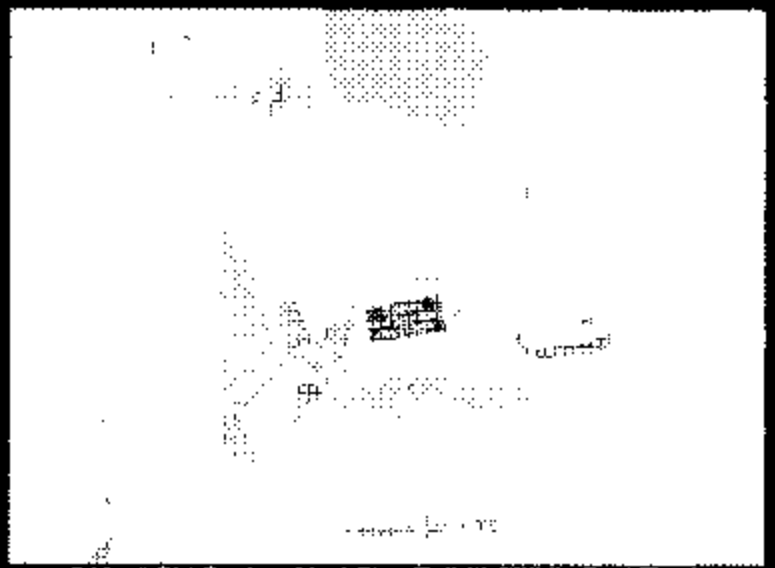
3-Year-Old Fwd Facing Evenflo Medallion Belted, Rearward Seat Track

Unbelted 5th Percentile Female Reactivation Seat, Forward Seat Track

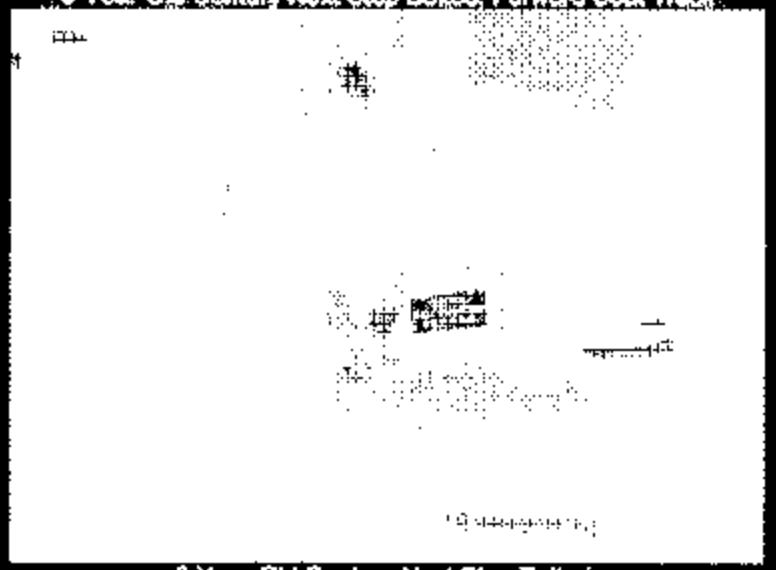
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

3 Year Old | Section D | Forward Facing Toddler | Belt Positioning Booster Seat

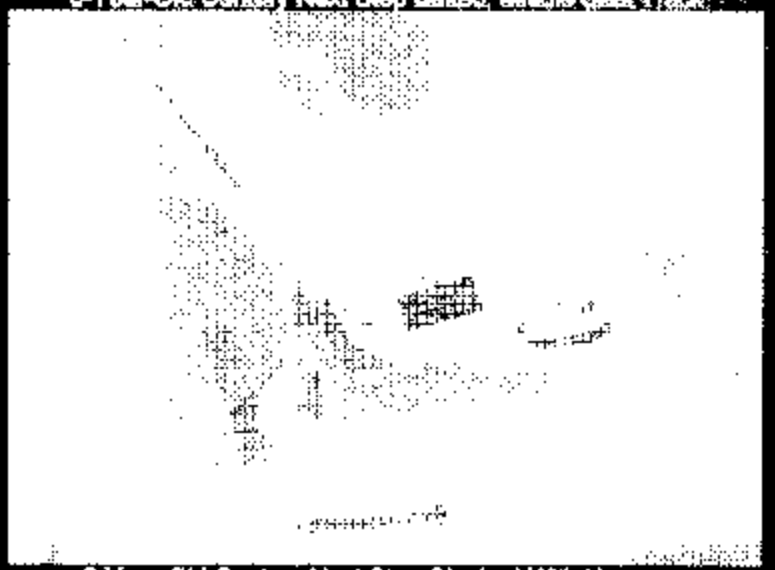
3-Year-Old Century Next Step Belted, Forward Seat Track



3-Year-Old Century Next Step Belted, Middle Seat Track



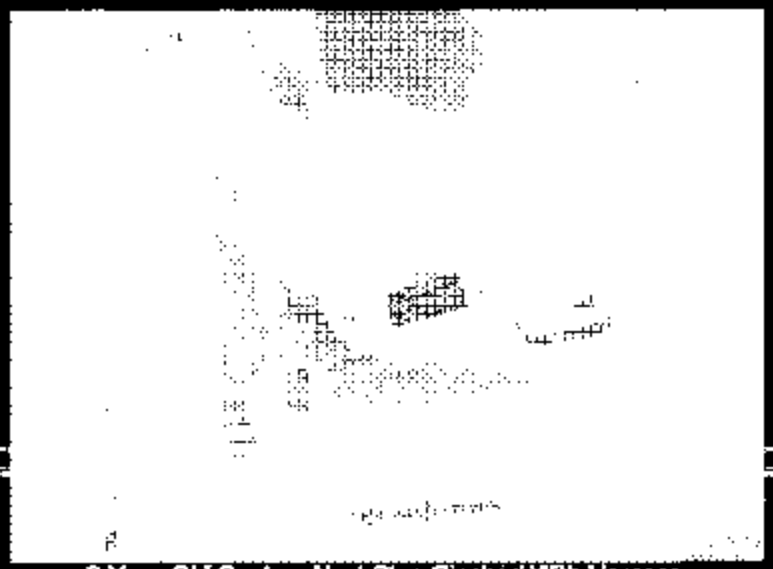
3-Year-Old Century Next Step Belted, Rearward Seat Track



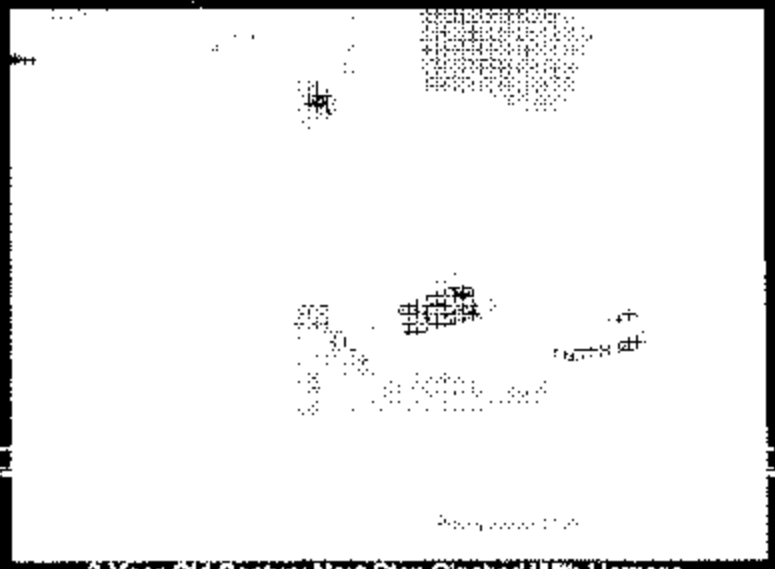
3-Year-Old Century Next Step Cinched With Harness, Forward Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

3 Year Old | Section D | Forward Facing Toddler | Belt Positioning Booster Seat

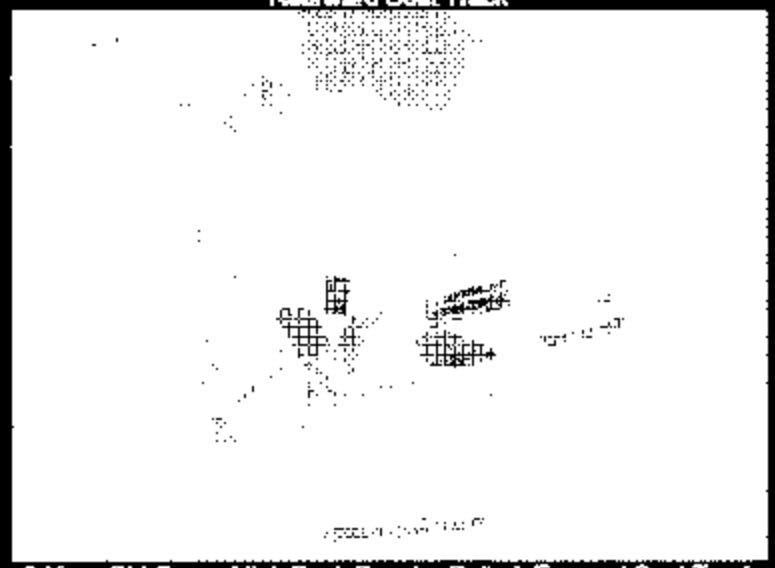


3-Year-Old Century Next Step Cinched With Harness, Middle Seat Track



3-Year-Old Century Next Step Cinched With Harness, Rearward Seat Track

Unbelted 5th Percentile Female Reactivation Seat, Middle Seat Track

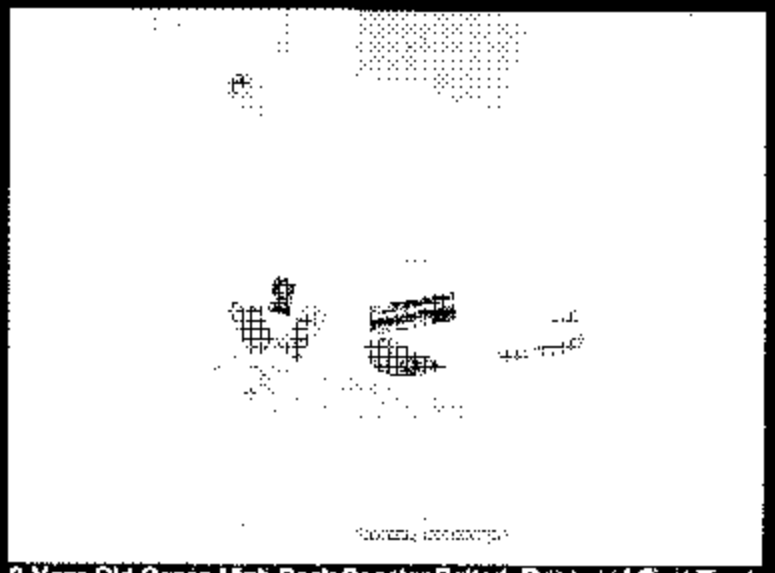


3-Year-Old Cosco High Back Booster Belted, Forward Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

3 Year Old | Section D | Forward Facing Toddler | Belt Positioning Booster Seat

3-Year-Old Cosco High Back Booster Belted, Middle Seat Track



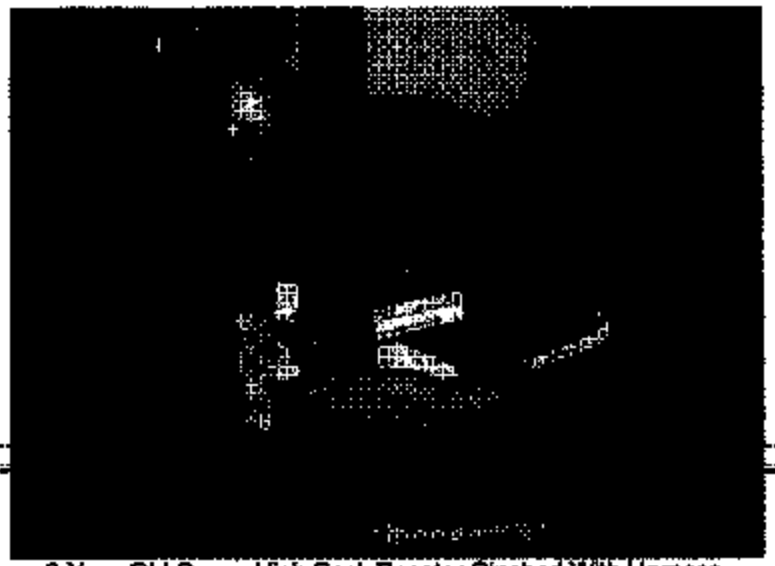
3-Year-Old Cosco High Back Booster Belted, Rearward Seat Track

3-Year-Old Cosco High Back Booster Cinched With Harness, Forward Seat Track

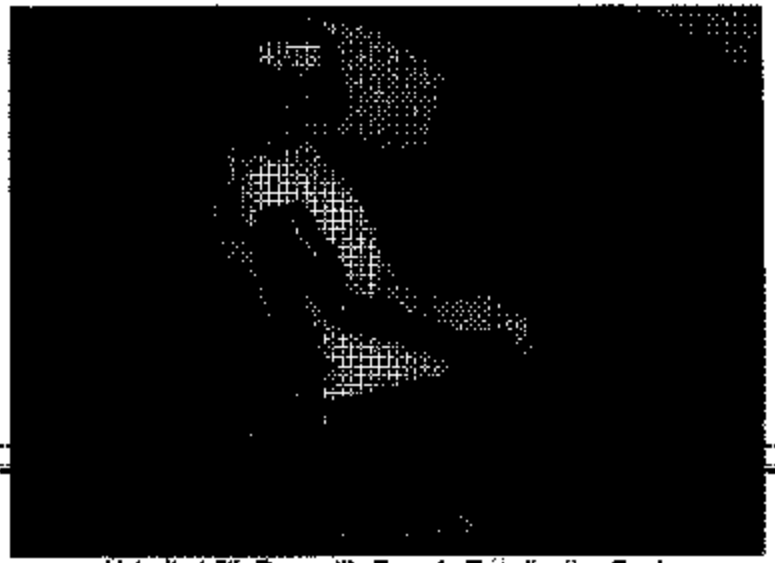
3-Year-Old Cosco High Back Booster Cinched With Harness, Middle Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

3 Year Old | Section D | Forward Facing Toddler | Belt Positioning Booster Seat



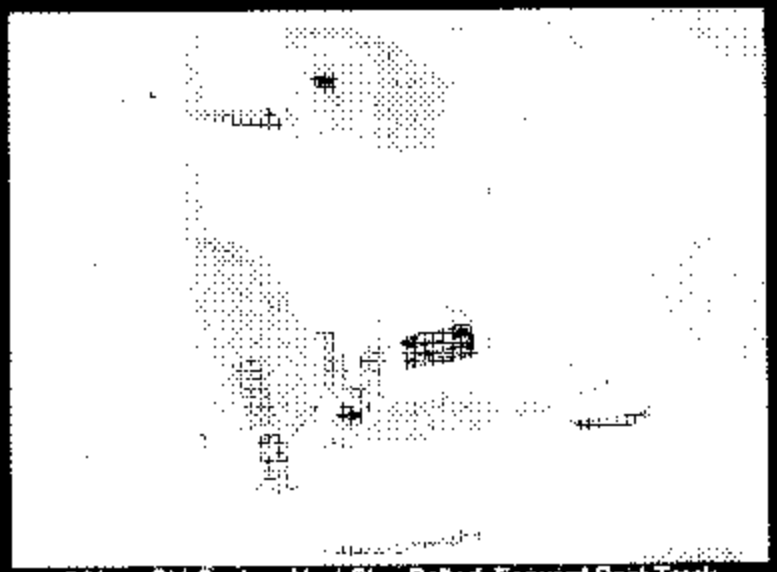
3-Year-Old Cosco High Back Booster Cinched With Harness, Rearward Seat Track



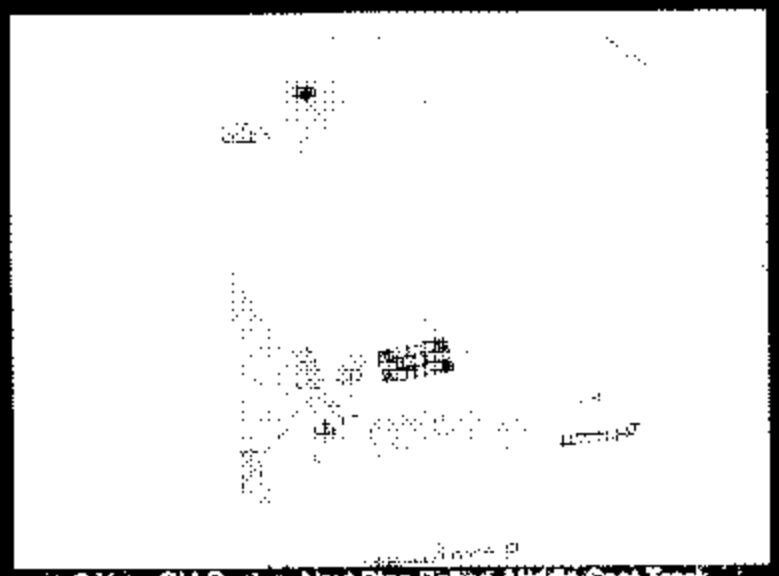
Unbelted 5th Percentile Female Reactivation Seat, Forward Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

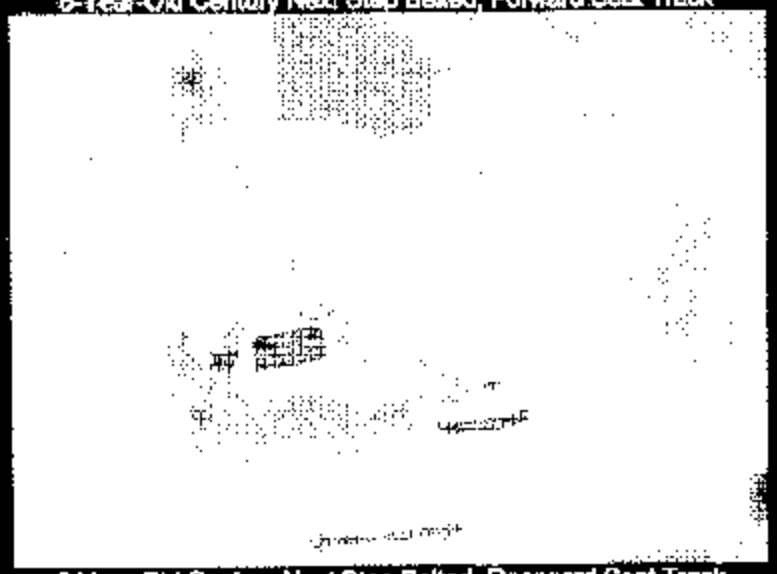
6 Year Old | Section D | Forward Facing Toddler | Belt Positioning Booster Seat



6-Year-Old Century Next Step Belted, Forward Seat Track



6-Year-Old Century Next Step Belted, Middle Seat Track



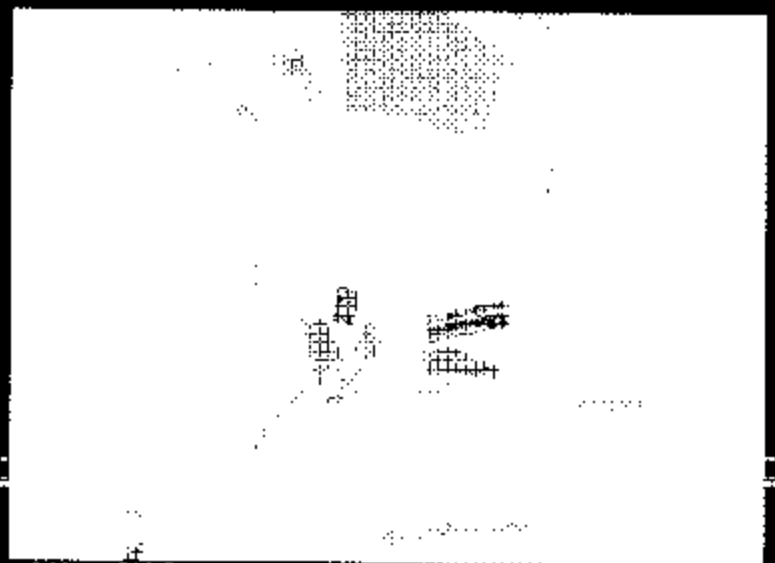
6-Year-Old Century Next Step Belted, Rearward Seat Track

Unbelted 5th Percentile Female Reactivation Seat, Middle Seat Track

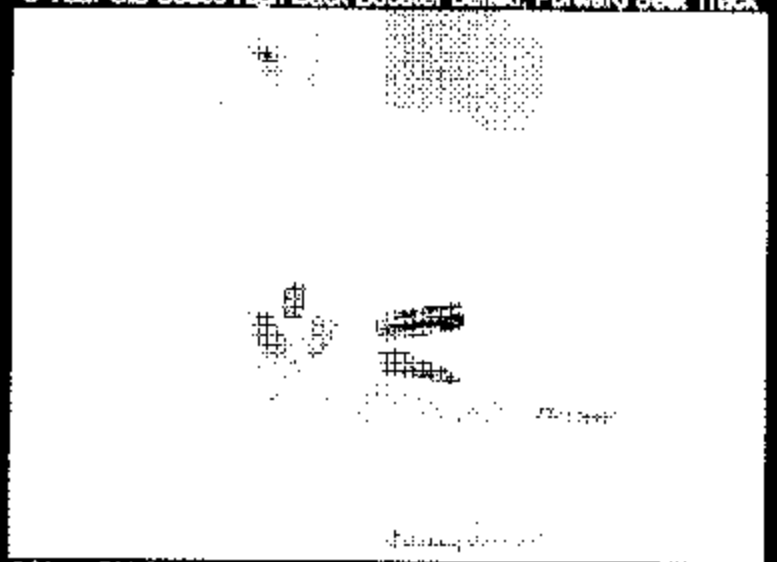
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

6 Year Old | Section D | Forward Facing Toddler | Belt Positioning Booster Seat

6-Year-Old Cosco High Back Booster Belted, Forward Seat Track



6-Year-Old Cosco High Back Booster Belted, Middle Seat Track

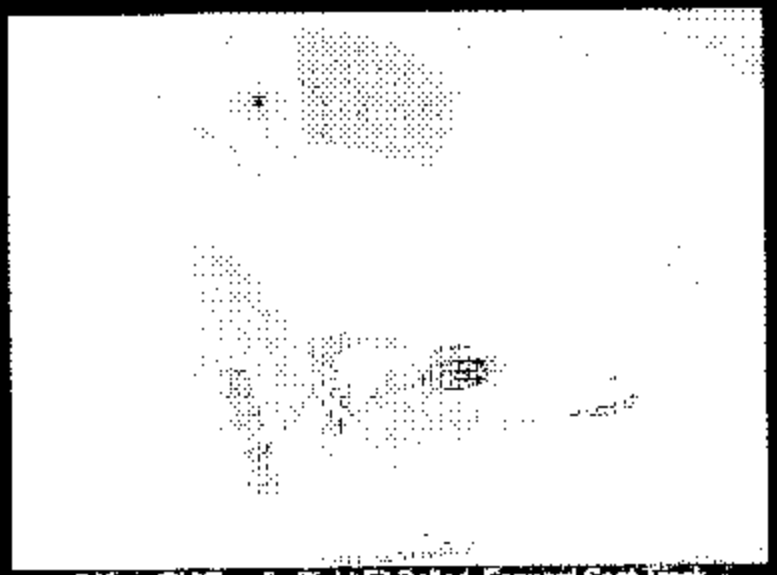


6-Year-Old Cosco High Back Booster Belted, Rearward Seat Track

Unbelted 5th Percentile Female Reactivation Seat, Rearward Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)

6 Year Old | Section D | Forward Facing Toddler | Belt Positioning Booster Seat



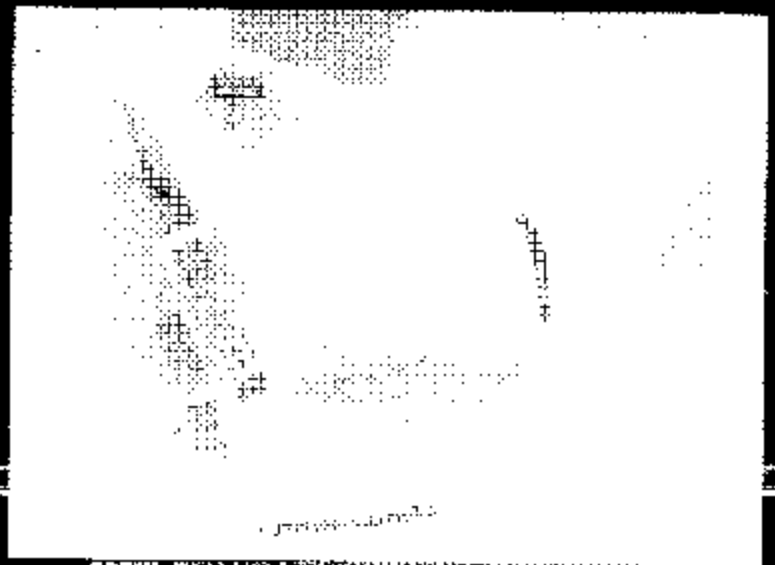
6-Year-Old Evenflo Right Fit Belted, Forward Seat Track

6-Year-Old Evenflo Right Fit Belted, Middle Seat Track

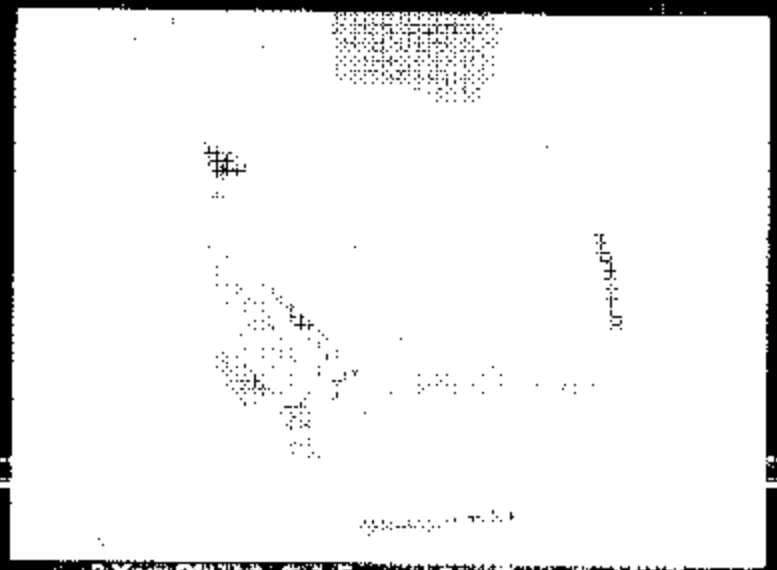
6-Year-Old Evenflo Right Fit Belted, Rearward Seat Track

Unbelted 5th Percentile Female Reactivation Seat, Middle Seat Track

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)
3 Year Old No CRS



3-Year-Old Unbelted, Forward Seat Track, Position 1



3-Year-Old Unbelted, Forward Seat Track, Position 2

3-Year-Old Unbelted, Forward Seat Track, Position 3

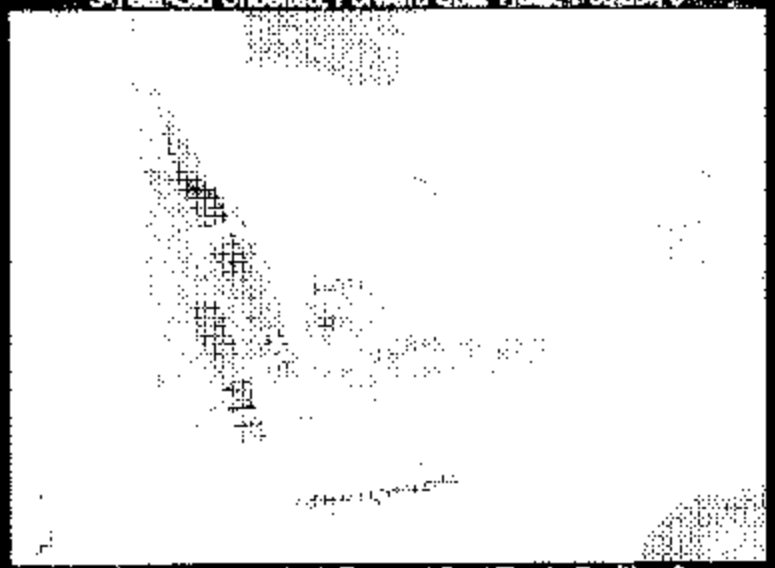
3-Year-Old Unbelted, Forward Seat Track, Position 4

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)
3 Year Old No CRS

3-Year-Old Unbelted, Forward Seat Track, Position 5

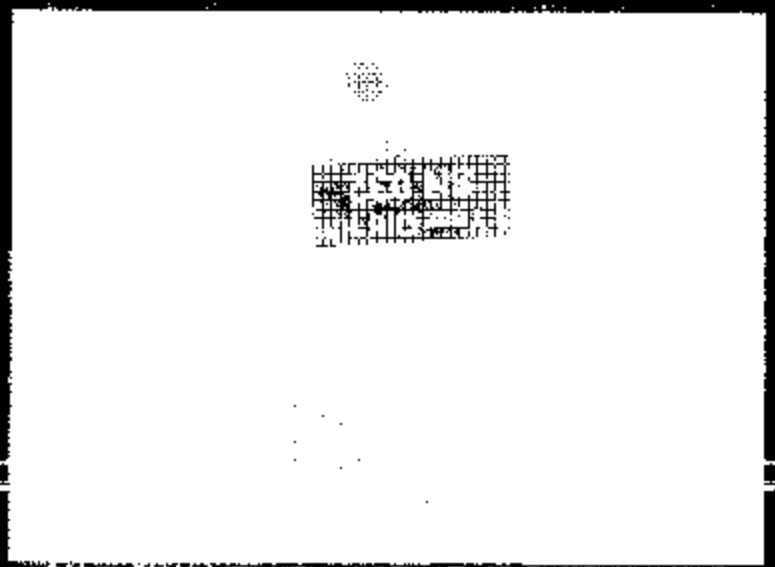
3-Year-Old Unbelted, Forward Seat Track, Position 6

3-Year-Old Unbelted, Forward Seat Track, Position 7

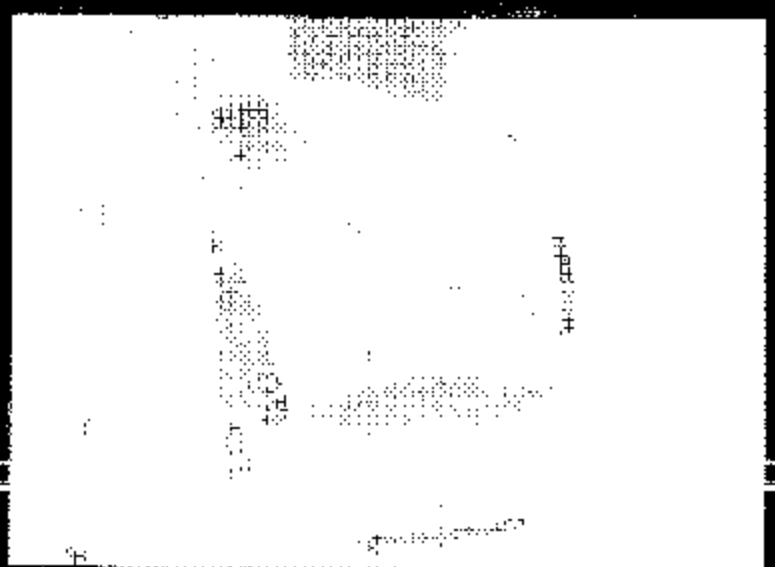


3-Year-Old Unbelted, Forward Seat Track, Position 8

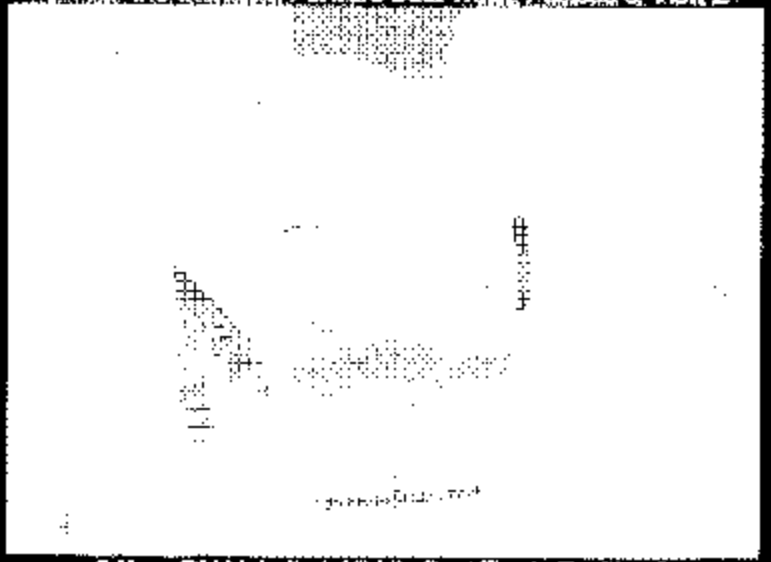
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)
3 Year Old No CRS



3-Year-Old Unbelted, Forward Seat Track, Position 3, View 2



3-Year-Old Unbelted, Middle Seat Track, Position 1

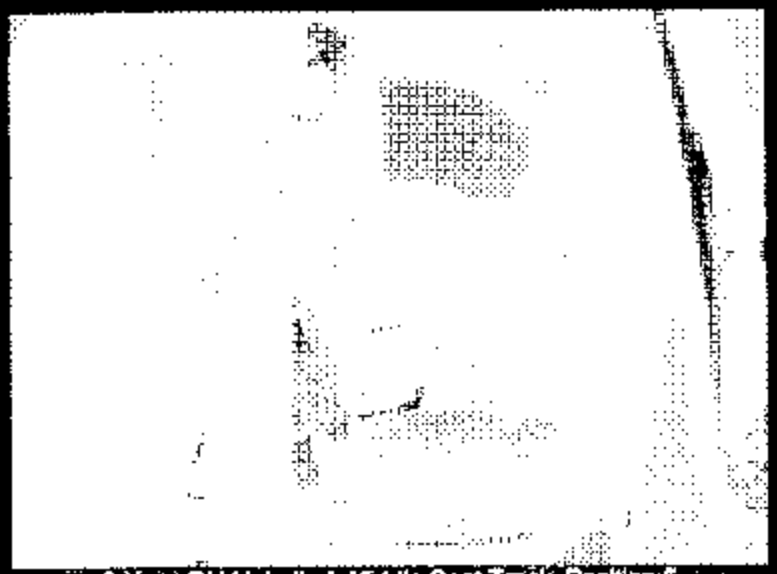


3-Year-Old Unbelted, Middle Seat Track, Position 2

3-Year-Old Unbelted, Middle Seat Track, Position 3

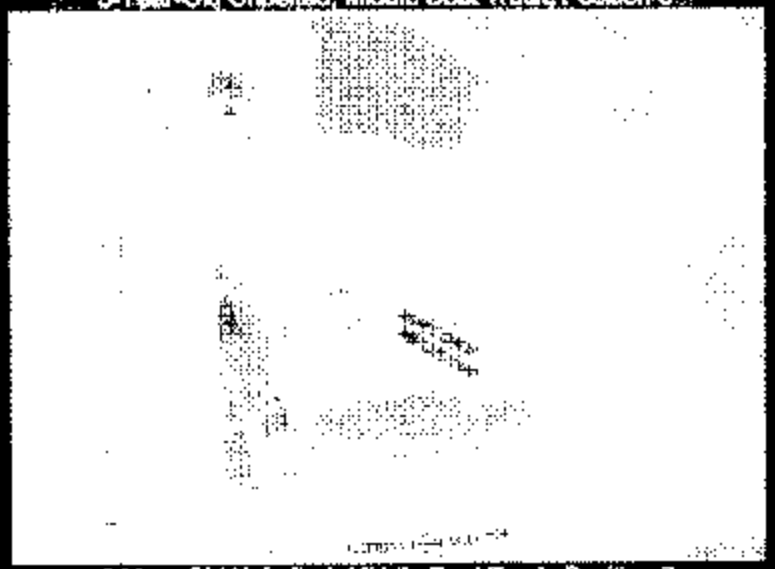
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)
3 Year Old No CRS

3-Year-Old Unbelted, Middle Seat Track, Position 4



3-Year-Old Unbelted, Middle Seat Track, Position 5

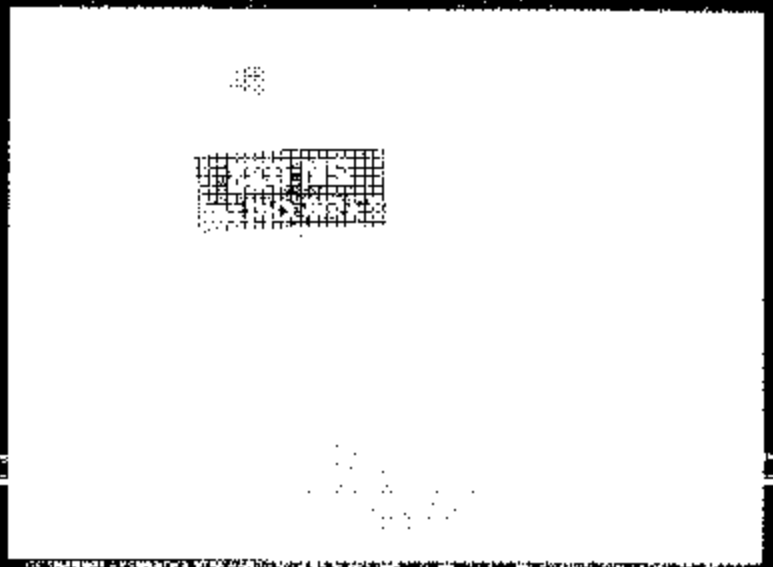
3-Year-Old Unbelted, Middle Seat Track, Position 6



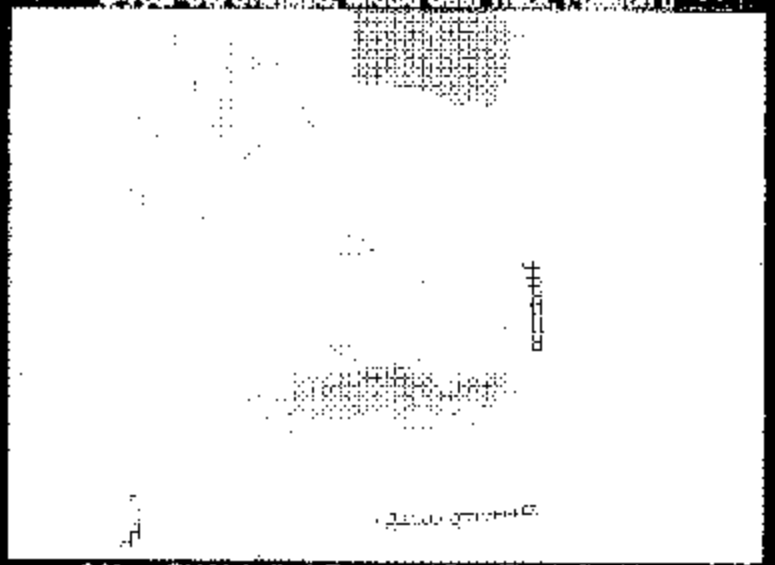
3-Year-Old Unbelted, Middle Seat Track, Position 7

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)
3 Year Old No CRS

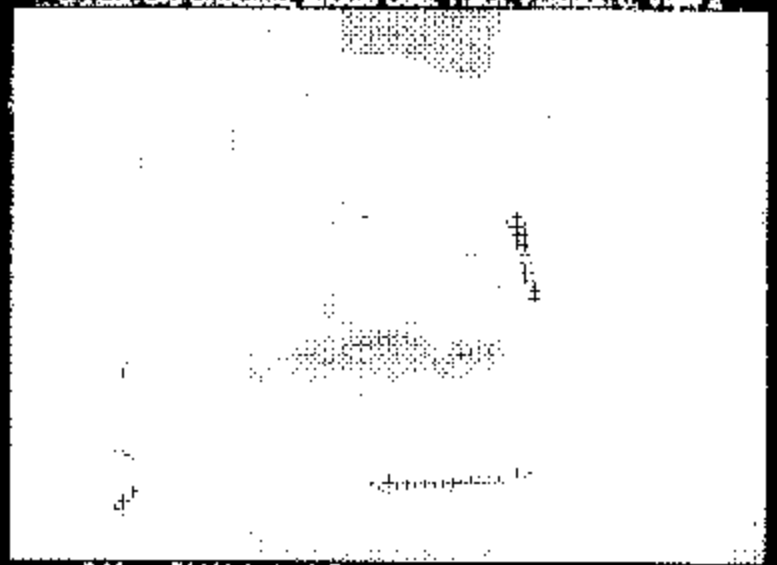
3-Year-Old Unbelted, Middle Seat Track, Position 6



3-Year-Old Unbelted, Middle Seat Track, Position 6, View 2

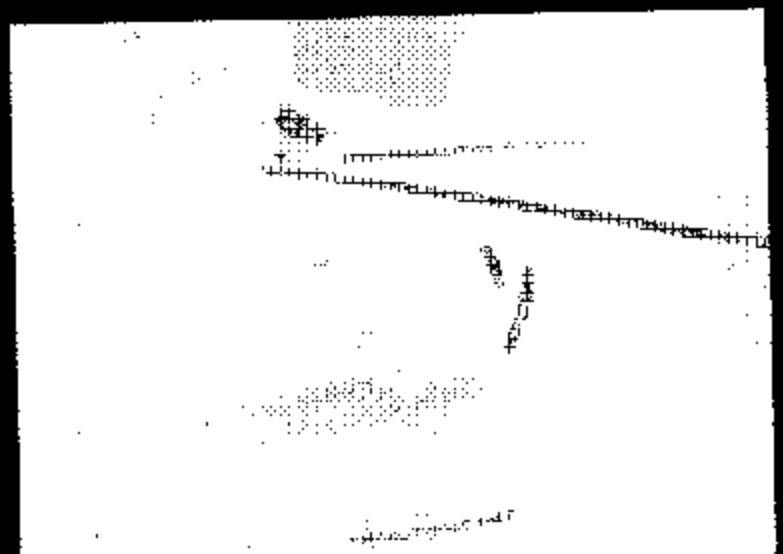


3-Year-Old Unbelted, Rearward Seat Track, Position 1

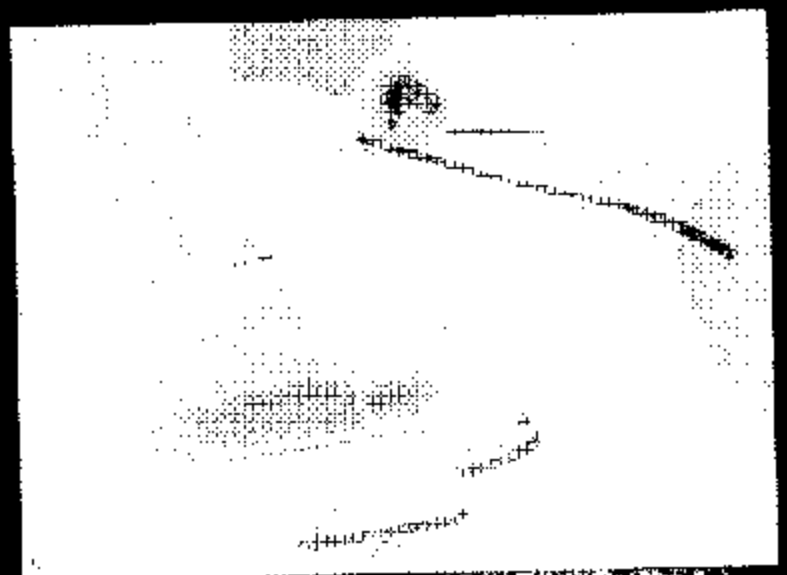


3-Year-Old Unbelted, Rearward Seat Track, Position 2

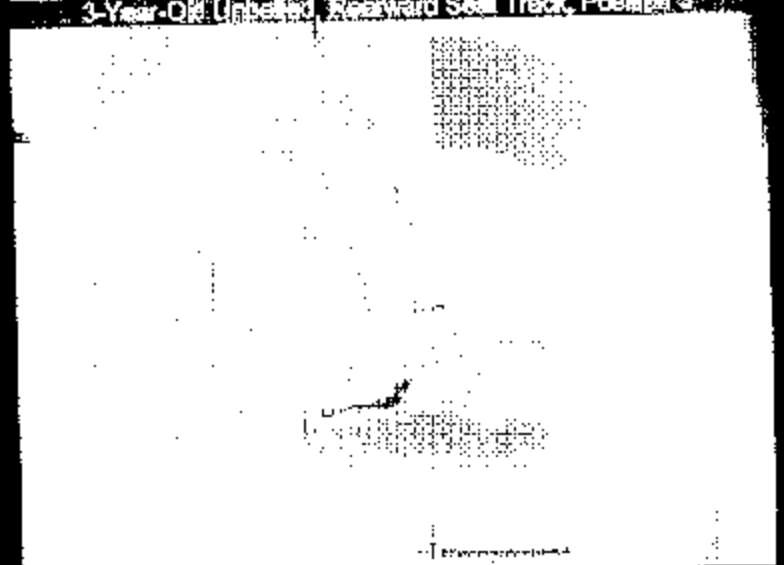
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)
3 Year Old No CRS



3-Year-Old Unbelted, Rearward Seat Track, Position 3



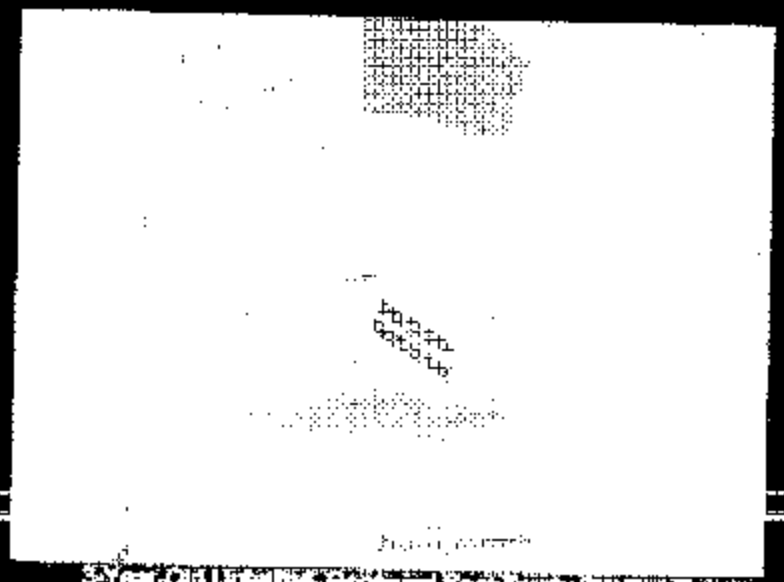
3-Year-Old Unbelted, Rearward Seat Track, Position 4



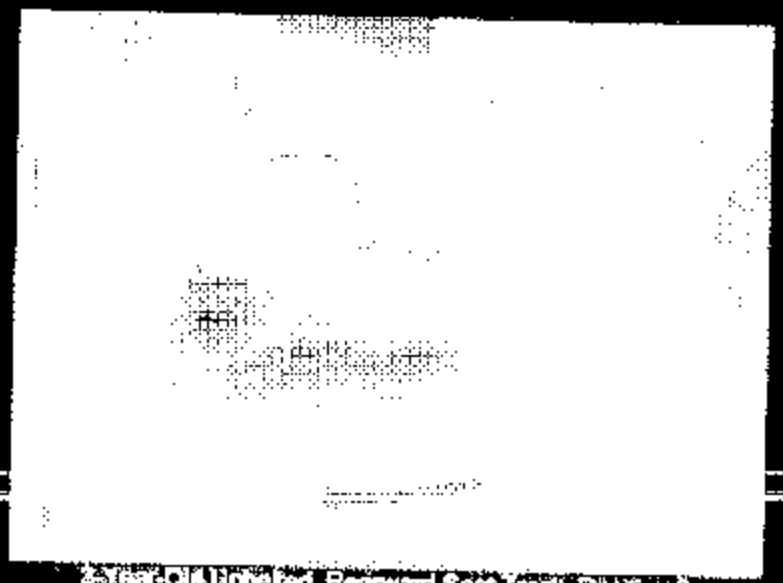
3-Year-Old Unbelted, Rearward Seat Track, Position 5

3-Year-Old Unbelted, Rearward Seat Track, Position 6

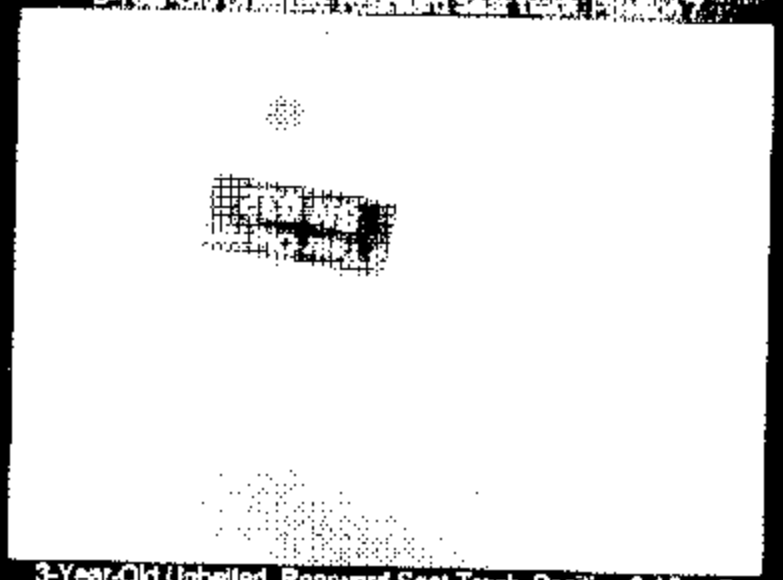
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)
3 Year Old No CRS



3-Year-Old Unbelted, Rearward Seat Track, Position 7



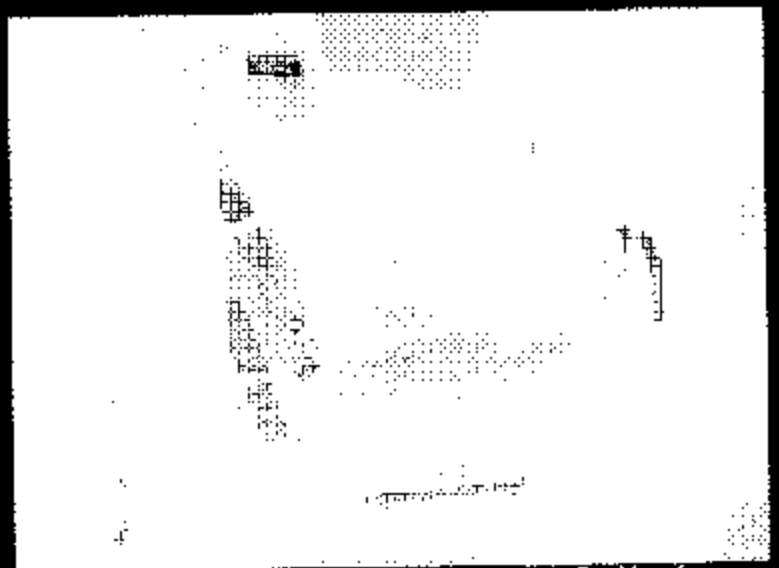
3-Year-Old Unbelted, Rearward Seat Track, Position 8



3-Year-Old Unbelted, Rearward Seat Track, Position 8, View 2

Unbelted 5th Percentile Female Reactivation Seat, Forward Seat Track

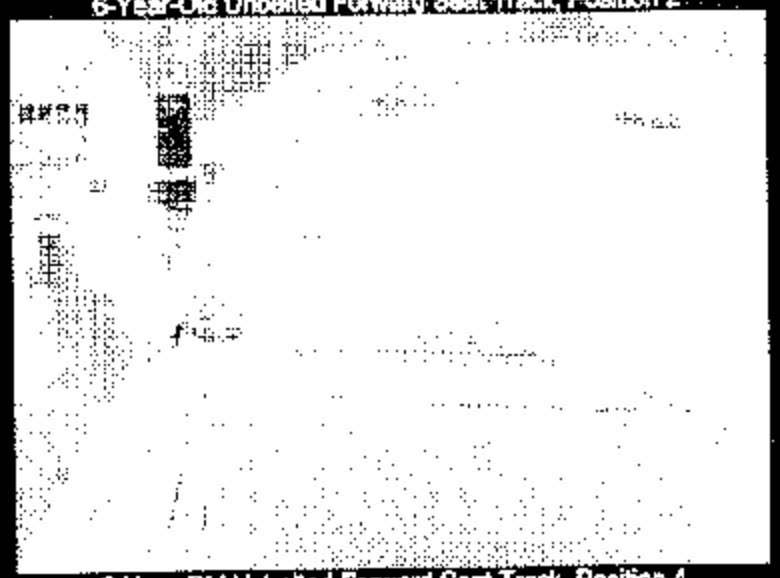
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)
6 Year Old No CRS



6-Year-Old Unbelted Forward Seat Track, Position 1

6-Year-Old Unbelted Forward Seat Track, Position 2

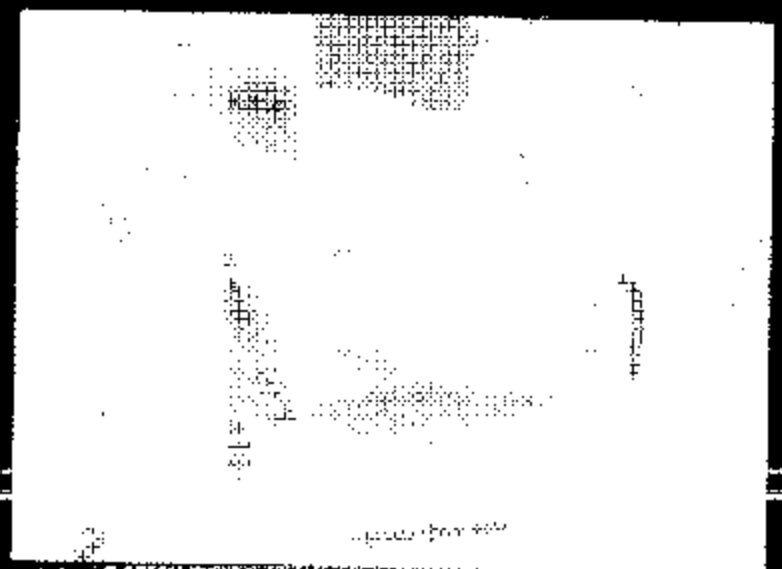
6-Year-Old Unbelted Forward Seat Track, Position 3



6-Year-Old Unbelted Forward Seat Track, Position 4

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)
6 Year Old No CRS

6-Year-Old Unbelted Forward Seat Track, Position 1, Side View



6-Year-Old Unbelted Middle Seat Track, Position 1

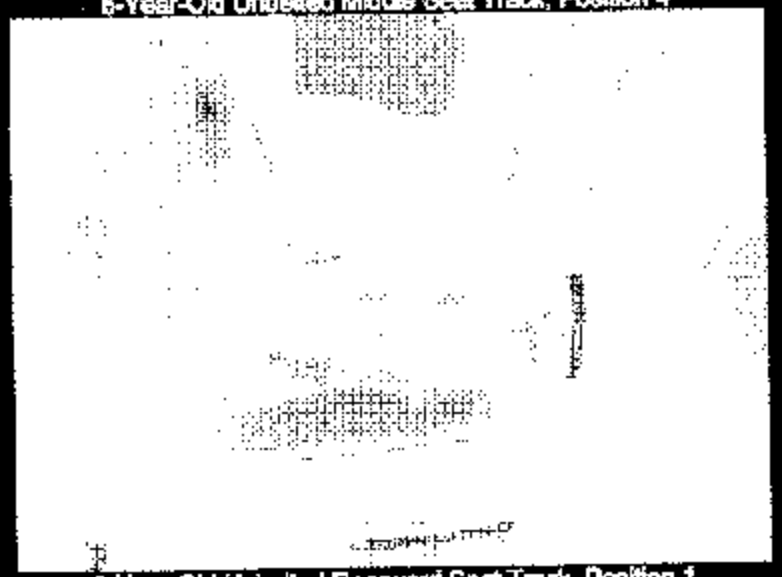
6-Year-Old Unbelted Middle Seat Track, Position 2

6-Year-Old Unbelted Middle Seat Track, Position 3

DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)
6 Year Old No CRS

6-Year-Old Unbelted Middle Seat Track, Position 4

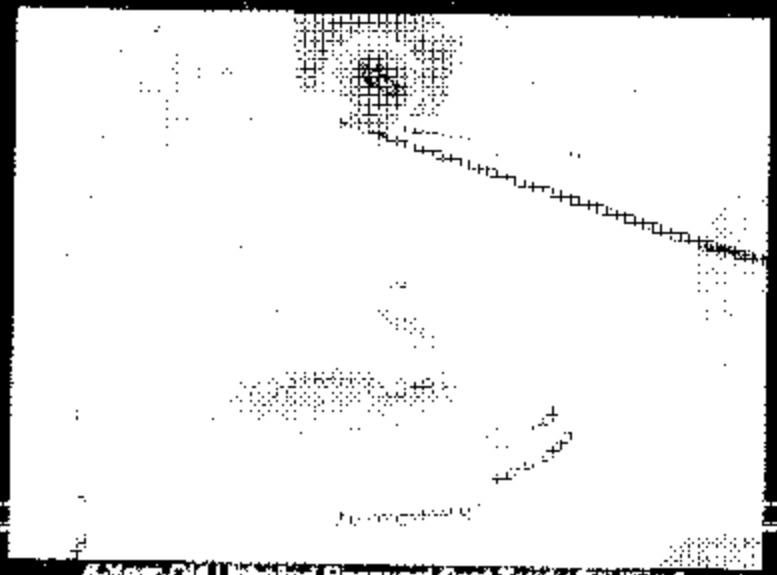
6-Year-Old Unbelted Middle Seat Track, Position 4, Side View



6-Year-Old Unbelted Rearward Seat Track, Position 1

6-Year-Old Unbelted Rearward Seat Track, Position 2

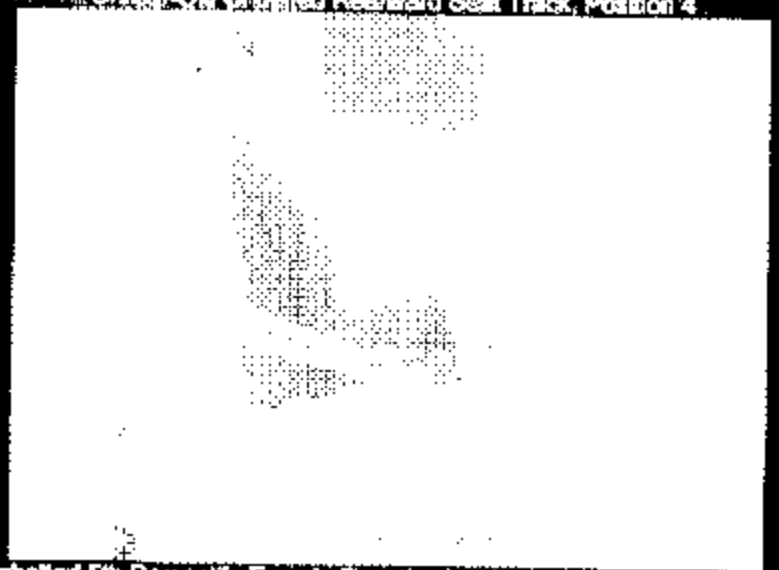
DOT/NHTSA 208 Suppression Test - 2004 Ford F-150 (C40200)
6 Year Old No CRS



6-Year-Old Unbelted Rearward Seat Track, Position 3

6-Year-Old Unbelted Rearward Seat Track, Position 4

6-Year-Old Unbelted Rearward Seat Track, Position 4, Side View



Unbelted 5th Percentile Female Reactivation Seat, Rearward Seat Track

APPENDIX F

INSTRUMENTATION CALIBRATION

INSTRUMENTS FOR DRIVER DUMMY NO. 505

	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	APYN0	Endevco	2/20/04
Head Y	ALFJ7	Endevco	2/20/04
Head Z	APYN3	Endevco	2/20/04
Neck Load Cell	1713	Denton	2/28/04
Chest X	J12471	Endevco	1/14/04
Chest Y	AP179	Endevco	1/13/04
Chest Z	J12423	Endevco	1/14/04
Chest Displacement	505	Servo	3/30/04
Left Femur Load Cell	946	GSE	1/17/04
Right Femur Load Cell	945	GSE	1/17/04
Right Upper Tibia Load Cell	80	Denton	8/22/03
Right Lower Tibia Load Cell	78	Denton	8/21/03
Left Upper Tibia Load Cell	82	Denton	8/22/03
Left Lower Tibia Load Cell	82	Denton	8/21/03
Left Knee Shear	021208	Servo	3/24/04
Right Knee Shear	022338	Servo	3/24/04
Left Tibia Mid-Shaft X	AP122	Endevco	3/24/04
Left Tibia Mid-Shaft Y	J18925	Endevco	3/24/04
Right Tibia Mid-Shaft X	P26984	Endevco	2/04/04
Right Tibia Mid-Shaft Y	P26989	Endevco	2/04/04
Left Mid-Foot X	AHT12	Endevco	3/24/04
Left Mid-Foot Y	AH0C3	Endevco	3/24/04
Left Mid-Foot Z	AHTN3	Endevco	3/24/04
Right Mid-Foot X	P22454	Endevco	2/03/04
Right Mid-Foot Y	P22972	Endevco	2/02/04
Right Mid-Foot Z	P22888	Endevco	2/02/04
Left Dorsi/Plantar Flexion	108	FTSS	12/17/03
Right Dorsi/Plantar Flexion	107	FTSS	12/17/03

INSTRUMENTS FOR PASSENGER DUMMY NO. 506

(ALSO USED ON BOTH LOW RISK DEPLOYMENT TESTS)

	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Head X	J10866	Endevco	2/23/04
Head Y	J11548	Endevco	2/23/04
Head Z	AK972	Endevco	2/23/04
Neck Load Cell	1562	Denton	2/07/04
Chest X	A12-A14	Entran	2/04/04
Chest Y	L17-Z13	Entran	2/04/04
Chest Z	L18-N01	Entran	2/04/04
Chest Displacement	506	Servo	2/24/04
Left Femur Load Cell	957	GSE	4/29/04
Right Femur Load Cell	956	GSE	4/29/04

VEHICLE INSTRUMENTS

	SERIAL NO.	MANUFACTURER	CALIBRATION DATE
Left Rear Seat Crossmember X	L17-D04	Entran	1/23/04
Right Rear Seat Crossmember X	A06-M06	Entran	3/09/04
Top of Engine X	L18-J10	Entran	3/30/04
Bottom of Engine X	L17-D25	Entran	3/30/04
Left Brake Caliper X	E01-F15	Entran	11/11/03
Right Brake Caliper X	K07-R18	Entran	1/21/04
Instrument Panel X	A29-F14	Entran	3/11/04
Trunk Z	K18-D11	Entran	12/15/03

APPENDIX G

NOTICE OF TEST FAILURE

LABORATORY NOTICE OF APPARENT TEST FAILURE TO OVSC

FMVSS NO. 208 TEST DATE: February 10, 2004

LABORATORY: MGA Research Corporation

CONTRACT NO.: DTNH22-03-D-11002 DELV. ORDER NO.: Contract

LABORATORY PROJECT ENGINEER'S NAME: Jeff Lewandowski

TEST SPECIMEN DESCRIPTION: 2004 Ford F-150 Truck

VEHICLE NHTSA NO.: C40200 VIN: 1FTRF12W84N[redacted]

MFR: Ford Motor Company

APPARENT TEST FAILURE DESCRIPTION: The telltale suppression light did not indicate suppression during 6 year old unbelted Position 1 (Sitting on seat with back against seat back). This occurred during the modified Forward position (9th notch aft) and the rearward position. The diagnostic tool also indicated that the airbag was active.

FMVSS REQUIREMENT, PARAGRAPH S___ :
S.22.2.2.1 6 year old unbelted Position 1 (Sitting on seat with back against seat back)

NOTIFICATION TO NHTSA (COTR): Charles Case

DATE: 2-10-2004 BY: Jeff Lewandowski

REMARKS:
Successive tests with this position yielded an 80% failure rate.
"Wiggling" the dummy had no affect on the test result when a non-suppression was found.
A videotape of the failure was submitted to Ford on 2-10-04.
Representatives from Ford (Pat Culkeen 313-594-4792) and Delphi (Charles Gray 765-451-3222) were on site at MGA on Friday 2-13-2004. The failure was duplicated and investigated

DATA SHEET 21

Suppression Test Using An Unbelted 6 Year Old Dummy (Part 572, Subpart N)

NHTSA No.:	C40200	TEST DATE:	2-10-2004
LABORATORY:	MGA	TECHNICIANS:	JL/TB
DUMMY TYPE:	6 Year Old	DUMMY SERIAL NO.:	152

Seat Position: __ Rearmost, mid-height __ Mid-position, mid-height X Foremost, mid-height
(Use a separate sheet for each of the three fore-aft positions.) (9th Aft ; 1st as One)

Do NOT use seat belts for these tests. (S22.2.2)

X 1. Sitting on seat with back against seat back (S22.2.2.1)

X 1.1 Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S22.1.7.1)
X N/A – No lumbar adjustment

X 1.2 Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S22.1.7.2)
X N/A – No additional support adjustment

X 1.3 If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S22.1.7.3)
X N/A – No independent fore-aft seat cushion adjustment

X 1.4 Place the seat in the position specified in the header information. Use the seat markings determined during the completion of Data Sheet 14 to set the fore-aft position, mid-height position and the seat cushion angle.

X 1.5 The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S24.1.2 and S8.1.3)

__ N/A – No seat back angle adjustment
Manufacturer's design seat back angle 18.5
Tested seat back angle 18.5

X 1.6 If adjustable, set the head restraint at the full down and full forward position. (S22.1.7.6) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
__ N/A – No head restraint adjustment

X 1.7 Position the dummy in the seated position and place it on the right front outboard seat. (S22.2.2.1 (a))

X 1.8 Position the dummy such that its midsagittal plane is coincident with Plane B (determined and marked during the completion of Data Sheet 14). (S22.2.2.1(b))

X 1.9 Position the dummy's torso against the seat back. (S22.2.2.1(b))

X 1.10 Position the dummy's thighs against the seat cushion. (S22.2.2.1(b))

X 1.11 Allow the legs of the dummy to extend off the surface of the seat. (S22.2.2.1(c))
If the seat must be moved rearward because of dummy contact with the instrument panel, describe the final location of the seat:
__ N/A – No dummy contact with the instrument panel.
Manual seat adjuster: 9 detent(s) rearward of the forward most position (Move the seat the minimum number of detents to eliminate contact with the instrument panel.)
Power seat adjuster: __ mm between instrument panel and child restraint (max. allowed is 5 mm.)

X 1.12 Rotate the dummy's upper arms until they contact the seat back. (S22.2.2.1(d))

X 1.13 Rotate the dummy's lower arms until the dummy's hands contact the seat cushion. (S22.2.2.1 (e))

X 1.14 Start the vehicle engine or place the ignition in the "on" position, whichever will turn on the suppression system, and close all vehicle doors. (S22.2.2.1(f)) Wait 10 seconds, and then check whether the air bag is suppressed. (S22.2.2.1(g))
__Air Bag Suppressed – Pass
X Air Bag Not Suppressed – **FAIL**

X 1.15 Return the ignition switch to the "off" position.

X 2. Sitting on seat with back against reclined seat back (S22.2.2.2)
__ N/A – No seat back angle adjustment

X 2.1 Keep the dummy and the seat in the same position as item 1 above.

X 2.2 Recline the seat back an additional 25 degrees or the closest position that does not exceed 25 degrees. (S22.2.2.2)
Initial seat back angle 18.5
Final seat back angle 42.6

X 2.3 Verify the dummy's midsagittal plane is coincident with Plane B (determined and marked during the completion of Data Sheet 14). (S22.2.2.1(b))

X 2.4 Verify the dummy's torso is against the seat back. (S22.2.2.1(b))

X 2.5 Verify the dummy's thighs are against the seat cushion. (S22.2.2.1(b))

X 2.6 Allow the legs of the dummy to extend off the surface of the seat. (S22.2.2.1(c))
If the seat must be moved rearward because of dummy contact with the instrument panel, describe the final location of the seat:
__ N/A – No dummy contact with the instrument panel.
Manual seat adjuster: __ detent(s) rearward of the forward most position (Move the seat the minimum number of detents to eliminate contact with the instrument panel.)
Power seat adjuster: __ mm between instrument panel and child restraint (max. allowed is 5 mm.)

X 2.7 Verify the dummy's upper arms contact the seat back. (S22.2.2.1(d))

X 2.8 Verify the dummy's hands contact the seat cushion. (S22.2.2.1(e))

X 2.9 Start the vehicle engine or place the ignition in the "on" position, whichever will turn on the suppression system, and close all vehicle doors. (S22.2.2.1(f)) Wait 10 seconds, and then check whether the air bag is suppressed. (S22.2.2.1(g))

X Air Bag Suppressed – Pass
__Air Bag Not Suppressed – FAIL

X 2.10 Return the ignition switch to the "off" position.

X 3. Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)

X 3.1 Keep the seat in the end position used for 2 above.

X 3.2 Incline the seat back to the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S22.1.7.5 and S8.1.3)

__ N/A – No seat back angle adjustment
Manufacturer's design seat back angle 18.5
Tested seat back angle 18.5

X 3.3 Position the dummy in the seated position and place it on the right front outboard seat. (S22.2.2.1(a))

X 3.4 Position the dummy such that its midsagittal plane is coincident with Plane B (determined and marked during the completion of Data Sheet 14). (S22.2.2.4(a))

X 3.5 Position the dummy forward in the seat such that the legs are vertical and the back of the legs rest against the front of the seat with the spine vertical. If the dummy's feet contact the floor pan raising part of the thighs off the seat cushion, rotate the legs forward until the dummy's thighs are resting on the seat cushion with the feet positioned flat on the floor pan and the dummy spine vertical. (S22.2.2.4(b))
If the seat must be moved rearward because of dummy contact with the instrument panel, describe the final location of the seat:
__ N/A – No dummy contact with the instrument panel.
Manual seat adjuster: __ detent(s) rearward of the forward most position (Move the seat the minimum number of detents to eliminate contact with the instrument panel.)
Power seat adjuster: __ mm between instrument panel and child restraint (max. allowed is 5 mm.)

X 3.6 Position the dummy's upper arms parallel to the spine. (S22.2.2.4(c))

X 3.7 Rotate the dummy's lower arms until the hands contact the seat cushion. (S22.2.2.4(d))

X 3.8 If necessary, hold the dummy in position with a material that has a maximum breaking strength of 311 N. (S22.2.2.4 (b))

X 3.9 Start the vehicle engine or place the ignition in the "on" position, whichever will turn on the suppression system, and close all vehicle doors. (S22.2.2.4(e)) Wait 10 seconds, and then check whether the air bag is suppressed. (S22.2.2.4(f))

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X Air Bag Suppressed – Pass
__Air Bag Not Suppressed – **FAIL**

X 3.10 Return the ignition switch to the "off" position.

X 4. Sitting back in the seat and leaning on the right front passenger door (S24.2.3)

X 4.1 Keep the seat in the end position used for 3 above.

X 4.2 Position the dummy in the seated position and place it on the right front outboard seat. (S24.2.3(a))

X 4.3 Position the dummy such that its midsagittal plane is coincident with Plane B (determined and marked during the completion of Data Sheet 14). (S24.2.3(a))

X 4.4 Position the dummy's back against the seat back and thighs on the seat cushion. (S24.2.3(b))

X 4.5 Allow the legs and feet to extend off the surface of the seat. If this positioning of the dummy's legs is prevented by contact with the instrument panel, move the seat rearward. (S24.2.3(c))
If the seat must be moved rearward because of dummy contact with the instrument panel, describe the final location of the seat:
__ N/A – No dummy contact with the instrument panel.
Manual seat adjuster: __ detent(s) rearward of the forward most position (Move the seat the minimum number of detents to eliminate contact with the instrument panel.)
Power seat adjuster: __ mm between instrument panel and child restraint (max. allowed is 5 mm.)

X 4.6 Rotate the dummy's upper arms toward the seat back until they make contact. (S24.2.3(d))

X 4.7 Rotate the dummy's lower arms down until they contact the seat. (S24.2.3(e))

X 4.8 Close the vehicle's passenger-side door and then start the vehicle engine or place the ignition in the "on" position, whichever will turn on the suppression system. (S24.2.3 (f))

X 4.9 Push against the dummy's left shoulder to lean the dummy against the door; close all remaining doors. (S24.2.3 (g)) **Initially Not Suppressed**

X 4.10 Wait 10 seconds, and then check whether the air bag is suppressed. (S24.2.3 (h))
X Air Bag Suppressed – Pass
__Air Bag Not Suppressed – **FAIL**
Suppressed When Leaning On Door

X 4.11 Return the ignition switch to the "off" position.

TB / JL _____ 2-10-04

I certify that I have read and performed each instruction. Date

Engineer: Jeff Lewandowski Date: 2-10-04

DATA SHEET 21

Suppression Test Using An Unbelted 6 Year Old Dummy (Part 572, Subpart N)

NHTSA No.:	C40200	TEST DATE:	2-10-2004
LABORATORY:	MGA	TECHNICIANS:	JL/TB
DUMMY TYPE:	6 Year Old	DUMMY SERIAL NO.:	152

Seat Position: __ Rearmost, mid-height X Mid-position, mid-height __ Foremost, mid-height
(Use a separate sheet for each of the three fore-aft positions.)

Do NOT use seat belts for these tests. (S22.2.2)

X 1. Sitting on seat with back against seat back (S22.2.2.1)

X 1.1 Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S22.1.7.1)
X N/A – No lumbar adjustment

X 1.2 Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S22.1.7.2)
X N/A – No additional support adjustment

X 1.3 If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S22.1.7.3)
X N/A – No independent fore-aft seat cushion adjustment

X 1.4 Place the seat in the position specified in the header information. Use the seat markings determined during the completion of Data Sheet 14 to set the fore-aft position, mid-height position and the seat cushion angle.

X 1.5 The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S24.1.2 and S8.1.3)

__ N/A – No seat back angle adjustment
Manufacturer's design seat back angle 18.5
Tested seat back angle 18.5

X 1.6 If adjustable, set the head restraint at the full down and full forward position. (S22.1.7.6) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
__ N/A – No head restraint adjustment

X 1.7 Position the dummy in the seated position and place it on the right front outboard seat. (S22.2.2.1 (a))

X 1.8 Position the dummy such that its midsagittal plane is coincident with Plane B (determined and marked during the completion of Data Sheet 14). (S22.2.2.1(b))

X 1.9 Position the dummy's torso against the seat back. (S22.2.2.1(b))

X 1.10 Position the dummy's thighs against the seat cushion. (S22.2.2.1(b))

X 1.11 Allow the legs of the dummy to extend off the surface of the seat. (S22.2.2.1(c))
If the seat must be moved rearward because of dummy contact with the instrument panel, describe the final location of the seat:
__ N/A – No dummy contact with the instrument panel.
Manual seat adjuster: __ detent(s) rearward of the forward most position (Move the seat the minimum number of detents to eliminate contact with the instrument panel.)
Power seat adjuster: __ mm between instrument panel and child restraint (max. allowed is 5 mm.)

X 1.12 Rotate the dummy's upper arms until they contact the seat back. (S22.2.2.1(d))

X 1.13 Rotate the dummy's lower arms until the dummy's hands contact the seat cushion. (S22.2.2.1 (e))

X 1.14 Start the vehicle engine or place the ignition in the "on" position, whichever will turn on the suppression system, and close all vehicle doors. (S22.2.2.1(f)) Wait 10 seconds, and then check whether the air bag is suppressed. (S22.2.2.1(g))
X Air Bag Suppressed – Pass
__Air Bag Not Suppressed – FAIL

X 1.15 Return the ignition switch to the "off" position.

X 2. Sitting on seat with back against reclined seat back (S22.2.2.2)
__ N/A – No seat back angle adjustment

X 2.1 Keep the dummy and the seat in the same position as item 1 above.

X 2.2 Recline the seat back an additional 25 degrees or the closest position that does not exceed 25 degrees. (S22.2.2.2)
Initial seat back angle 18.5
Final seat back angle 42.6

X 2.3 Verify the dummy's midsagittal plane is coincident with Plane B (determined and marked during the completion of Data Sheet 14). (S22.2.2:1(b))

X 2.4 Verify the dummy's torso is against the seat back. (S22.2.2.1(b))

X 2.5 Verify the dummy's thighs are against the seat cushion. (S22.2.2.1(b))

X 2.6 Allow the legs of the dummy to extend off the surface of the seat. (S22.2.2.1(c))
If the seat must be moved rearward because of dummy contact with the instrument panel, describe the final location of the seat:
__ N/A – No dummy contact with the instrument panel.
Manual seat adjuster: __ detent(s) rearward of the forward most position (Move the seat the minimum number of detents to eliminate contact with the instrument panel.)
Power seat adjuster: __ mm between instrument panel and child restraint (max. allowed is 5 mm.)

X 2.7 Verify the dummy's upper arms contact the seat back. (S22.2.2.1(d))

X 2.8 Verify the dummy's hands contact the seat cushion. (S22.2.2.1(e))

X 2.9 Start the vehicle engine or place the ignition in the "on" position, whichever will turn on the suppression system, and close all vehicle doors. (S22.2.2.1(f)) Wait 10 seconds, and then check whether the air bag is suppressed. (S22.2.2.1(g))

X Air Bag Suppressed – Pass
__ Air Bag Not Suppressed – FAIL

X 2.10 Return the ignition switch to the "off" position.

X 3. Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)

X 3.1 Keep the seat in the end position used for 2 above.

X 3.2 Incline the seat back to the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S22.1.7.5 and S8.1.3)

__ N/A – No seat back angle adjustment
Manufacturer's design seat back angle 18.5
Tested seat back angle 18.5

X 3.3 Position the dummy in the seated position and place it on the right front outboard seat. (S22.2.2.1(a))

X 3.4 Position the dummy such that its midsagittal plane is coincident with Plane B (determined and marked during the completion of Data Sheet 14). (S22.2.2.4(a))

X 3.5 Position the dummy forward in the seat such that the legs are vertical and the back of the legs rest against the front of the seat with the spine vertical. If the dummy's feet contact the floor pan raising part of the thighs off the seat cushion, rotate the legs forward until the dummy's thighs are resting on the seat cushion with the feet positioned flat on the floor pan and the dummy spine vertical. (S22.2.2.4(b))
If the seat must be moved rearward because of dummy contact with the instrument panel, describe the final location of the seat:
__ N/A – No dummy contact with the instrument panel.
Manual seat adjuster: __ detent(s) rearward of the forward most position (Move the seat the minimum number of detents to eliminate contact with the instrument panel.)
Power seat adjuster: __ mm between instrument panel and child restraint (max. allowed is 5 mm.)

X 3.6 Position the dummy's upper arms parallel to the spine. (S22.2.2.4(c))

X 3.7 Rotate the dummy's lower arms until the hands contact the seat cushion. (S22.2.2.4(d))

X 3.8 If necessary, hold the dummy in position with a material that has a maximum breaking strength of 311 N. (S22.2.2.4 (b))

X 3.9 Start the vehicle engine or place the ignition in the "on" position, whichever will turn on the suppression system, and close all vehicle doors. (S22.2.2.4(e)) Wait 10 seconds, and then check whether the air bag is suppressed. (S22.2.2.4(f))

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X Air Bag Suppressed – Pass
__Air Bag Not Suppressed – **FAIL**

X 3.10 Return the ignition switch to the "off" position.

X 4. Sitting back in the seat and leaning on the right front passenger door (S24.2.3)

X 4.1 Keep the seat in the end position used for 3 above.

X 4.2 Position the dummy in the seated position and place it on the right front outboard seat. (S24.2.3(a))

X 4.3 Position the dummy such that its midsagittal plane is coincident with Plane B (determined and marked during the completion of Data Sheet 14). (S24.2.3(a))

X 4.4 Position the dummy's back against the seat back and thighs on the seat cushion. (S24.2.3(b))

X 4.5 Allow the legs and feet to extend off the surface of the seat. If this positioning of the dummy's legs is prevented by contact with the instrument panel, move the seat rearward. (S24.2.3(c))
If the seat must be moved rearward because of dummy contact with the instrument panel, describe the final location of the seat:
__ N/A – No dummy contact with the instrument panel.
Manual seat adjuster: __ detent(s) rearward of the forward most position (Move the seat the minimum number of detents to eliminate contact with the instrument panel.)
Power seat adjuster: __ mm between instrument panel and child restraint (max. allowed is 5 mm.)

X 4.6 Rotate the dummy's upper arms toward the seat back until they make contact. (S24.2.3(d))

X 4.7 Rotate the dummy's lower arms down until they contact the seat. (S24.2.3(e))

X 4.8 Close the vehicle's passenger-side door and then start the vehicle engine or place the ignition in the "on" position, whichever will turn on the suppression system. (S24.2.3 (f))

X 4.9 Push against the dummy's left shoulder to lean the dummy against the door; close all remaining doors. (S24.2.3 (g)) **Initially Not Suppressed**

X 4.10 Wait 10 seconds, and then check whether the air bag is suppressed. (S24.2.3 (h))
X Air Bag Suppressed – Pass
__Air Bag Not Suppressed – **FAIL**
Suppressed When Leaning On Door

X 4.11 Return the ignition switch to the "off" position.

TB / JL 2-10-04

I certify that I have read and performed each instruction. Date

Engineer: Jeff Lewandowski Date: 2-10-04

DATA SHEET 21

Suppression Test Using An Unbelted 6 Year Old Dummy (Part 572, Subpart N)

NHTSA No.:	C40200	TEST DATE:	2-10-2004
LABORATORY:	MGA	TECHNICIANS:	JL/TB
DUMMY TYPE:	6 Year Old	DUMMY SERIAL NO.:	152

Seat Position: X Rearmost, mid-height __ Mid-position, mid-height __Foremost, mid-height
(Use a separate sheet for each of the three fore-aft positions.)

Do NOT use seat belts for these tests. (S22.2.2)

X 1. Sitting on seat with back against seatback (S22.2.2.1)

X 1.1 Position the seat's adjustable lumbar supports so that the lumbar support is in its lowest, retracted or deflated adjustment position. (S22.1.7.1)
X N/A – No lumbar adjustment

X 1.2 Position any adjustable parts of the seat that provide additional support so that they are in the lowest or most open adjustment position. (S22.1.7.2)
X N/A – No additional support adjustment

X 1.3 If the seat cushion adjusts fore and aft, independent of the seat back, set this adjustment to the full rearward position. (S22.1.7.3)
X N/A – No independent fore-aft seat cushion adjustment

X 1.4 Place the seat in the position specified in the header information. Use the seat markings determined during the completion of Data Sheet 14 to set the fore-aft position, mid-height position and the seat cushion angle.

X 1.5 The seat back angle, if adjustable, is set at the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S24.1.2 and S8.1.3)

__ N/A – No seat back angle adjustment
Manufacturer's design seat back angle ____18.5____
Tested seat back angle ____18.5____

X 1.6 If adjustable, set the head restraint at the full down and full forward position. (S22.1.7.6) Any adjustment of the head restraint shall be used to position it full forward. For example, if it rotates, rotate it such that the head restraint extends as far forward as possible.
__ N/A – No head restraint adjustment

X 1.7 Position the dummy in the seated position and place it on the right front outboard seat. (S22.2.2.1 (a))

X 1.8 Position the dummy such that its midsagittal plane is coincident with Plane B (determined and marked during the completion of Data Sheet 14). (S22.2.2.1(b))

X 1.9 Position the dummy's torso against the seat back. (S22.2.2.1(b))

X 1.10 Position the dummy's thighs against the seat cushion. (S22.2.2.1(b))

X 1.11 Allow the legs of the dummy to extend off the surface of the seat. (S22.2.2.1(c))
If the seat must be moved rearward because of dummy contact with the instrument panel, describe the final location of the seat:
__ N/A – No dummy contact with the instrument panel.
Manual seat adjuster: __ detent(s) rearward of the forward most position (Move the seat the minimum number of detents to eliminate contact with the instrument panel.)
Power seat adjuster: __ mm between instrument panel and child restraint (max. allowed is 5 mm.)

X 1.12 Rotate the dummy's upper arms until they contact the seat back. (S22.2.2.1(d))

X 1.13 Rotate the dummy's lower arms until the dummy's hands contact the seat cushion. (S22.2.2.1 (e))

X 1.14 Start the vehicle engine or place the ignition in the "on" position, whichever will turn on the suppression system, and close all vehicle doors. (S22.2.2.1(f)) Wait 10 seconds, and then check whether the air bag is suppressed. (S22.2.2.1(g))
__Air Bag Suppressed – Pass
X Air Bag Not Suppressed – **FAIL**

X 1.15 Return the ignition switch to the "off" position.

X 2. Sitting on seat with back against reclined seat back (S22.2.2.2)
__ N/A – No seat back angle adjustment

X 2.1 Keep the dummy and the seat in the same position as item 1 above.

X 2.2 Recline the seat back an additional 25 degrees or the closest position that does not exceed 25 degrees. (S22.2.2.2)
Initial seat back angle 18.5
Final seat back angle 29.5 Cab prevents further recline

X 2.3 Verify the dummy's midsagittal plane is coincident with Plane B (determined and marked during the completion of Data Sheet 14). (S22.2.2.1(b))

X 2.4 Verify the dummy's torso is against the seat back. (S22.2.2.1(b))

X 2.5 Verify the dummy's thighs are against the seat cushion. (S22.2.2.1(b))

X 2.6 Allow the legs of the dummy to extend off the surface of the seat. (S22.2.2.1(c))
If the seat must be moved rearward because of dummy contact with the instrument panel, describe the final location of the seat:
__ N/A – No dummy contact with the instrument panel.
Manual seat adjuster: __ detent(s) rearward of the forward most position (Move the seat the minimum number of detents to eliminate contact with the instrument panel.)
Power seat adjuster: __ mm between instrument panel and child restraint (max. allowed is 5 mm.)

X 2.7 Verify the dummy's upper arms contact the seat back. (S22.2.2.1(d))

X 2.8 Verify the dummy's hands contact the seat cushion. (S22.2.2.1(e))

X 2.9 Start the vehicle engine or place the ignition in the "on" position, whichever will turn on the suppression system, and close all vehicle doors. (S22.2.2.1(f)) Wait 10 seconds, and then check whether the air bag is suppressed. (S22.2.2.1(g))

X Air Bag Suppressed – Pass
__ Air Bag Not Suppressed – FAIL

X 2.10 Return the ignition switch to the "off" position.

X 3. Sitting on seat edge, spine vertical, hands by the dummy's side (S22.2.2.4)

X 3.1 Keep the seat in the end position used for 2 above.

X 3.2 Incline the seat back to the manufacturer's nominal design riding position for a 50th percentile adult male in the manner specified by the manufacturer. (S22.1.7.5 and S8.1.3)

__ N/A – No seat back angle adjustment
Manufacturer's design seat back angle 18.5
Tested seat back angle 18.5

X 3.3 Position the dummy in the seated position and place it on the right front outboard seat. (S22.2.2.1(a))

X 3.4 Position the dummy such that its midsagittal plane is coincident with Plane B (determined and marked during the completion of Data Sheet 14). (S22.2.2.4(a))

X 3.5 Position the dummy forward in the seat such that the legs are vertical and the back of the legs rest against the front of the seat with the spine vertical. If the dummy's feet contact the floor pan raising part of the thighs off the seat cushion, rotate the legs forward until the dummy's thighs are resting on the seat cushion with the feet positioned flat on the floor pan and the dummy spine vertical. (S22.2.2.4(b))
If the seat must be moved rearward because of dummy contact with the instrument panel, describe the final location of the seat:
__ N/A – No dummy contact with the instrument panel.
Manual seat adjuster: __ detent(s) rearward of the forward most position (Move the seat the minimum number of detents to eliminate contact with the instrument panel.)
Power seat adjuster: __ mm between instrument panel and child restraint (max. allowed is 5 mm.)

X 3.6 Position the dummy's upper arms parallel to the spine. (S22.2.2.4(c))

X 3.7 Rotate the dummy's lower arms until the hands contact the seat cushion. (S22.2.2.4(d))

X 3.8 If necessary, hold the dummy in position with a material that has a maximum breaking strength of 311 N. (S22.2.2.4 (b))

X 3.9 Start the vehicle engine or place the ignition in the "on" position, whichever will turn on the suppression system, and close all vehicle doors. (S22.2.2.4(e)) Wait 10 seconds, and then check whether the air bag is suppressed. (S22.2.2.4(f))
X Air Bag Suppressed – Pass

__Air Bag Not Suppressed – **FAIL**

X 3.10 Return the ignition switch to the "off" position.

X 4. Sitting back in the seat and leaning on the right front passenger door (S24.2.3)

X 4.1 Keep the seat in the end position used for 3 above.

X 4.2 Position the dummy in the seated position and place it on the right front outboard seat. (S24.2.3(a))

X 4.3 Position the dummy such that its midsagittal plane is coincident with Plane B (determined and marked during the completion of Data Sheet 14). (S24.2.3(a))

X 4.4 Position the dummy's back against the seat back and thighs on the seat cushion. (S24.2.3(b))

X 4.5 Allow the legs and feet to extend off the surface of the seat. If this positioning of the dummy's legs is prevented by contact with the instrument panel, move the seat rearward. (S24.2.3(c))
If the seat must be moved rearward because of dummy contact with the instrument panel, describe the final location of the seat:
__ N/A – No dummy contact with the instrument panel.
Manual seat adjuster: __ detent(s) rearward of the forward most position (Move the seat the minimum number of detents to eliminate contact with the instrument panel.)
Power seat adjuster: __ mm between instrument panel and child restraint (max. allowed is 5 mm.)

X 4.6 Rotate the dummy's upper arms toward the seat back until they make contact. (S24.2.3(d))

X 4.7 Rotate the dummy's lower arms down until they contact the seat. (S24.2.3(e))

X 4.8 Close the vehicle's passenger-side door and then start the vehicle engine or place the ignition in the "on" position, whichever will turn on the suppression system. (S24.2.3 (f))

X 4.9 Push against the dummy's left shoulder to lean the dummy against the door; close all remaining doors. (S24.2.3 (g)) **Initially Not Suppressed**

X 4.10 Wait 10 seconds, and then check whether the air bag is suppressed. (S24.2.3 (h))
X Air Bag Suppressed – Pass
__Air Bag Not Suppressed – **FAIL**
Suppressed When Leaning On Door

X 4.11 Return the ignition switch to the "off" position.

TB / JL 2-10-04

I certify that I have read and performed each instruction. Date

Engineer: Jeff Lewandowski Date: 2-10-04

DATA SHEET 29

Test of Reactivation of the Passenger Air Bag System with an Unbelted 5th Percentile Female Dummy (S20.3, 22.3, S24.3)

NHTSA No.:	C40200	TEST DATE:	2-10-04
LABORATORY:	MGA	TECHNICIANS:	JL/TB
DUMMY TYPE:	5th Percentile Female	DUMMY SERIAL NO.:	513

Seat Position: X Rearmost __ Mid-position __ Foremost (S20.3.1, 22.3.1, S24.3.1)

Do NOT use seat belts for these tests.

X 1. This reactivation test is being performed after the following suppression test:

__ Suppression Test Using 12-Month-Old CRABI Dummy (S20)
After section __ of data sheet 15
__ Suppression Test Using Newborn Infant Dummy (S20)
After section __ of data sheet 16
__ Suppression Test Using 3-Year-Old Dummy and Booster Seats (S22)
After section __ of data sheet 17
__ Suppression Test Using 3-Year-Old Dummy and Forward Facing Convertible Child Restraints (S22)
After section __ of data sheet 18
__ Suppression Test Using an Unbelted 3-Year-Old Dummy (S22)
After section __ of data sheet 19
__ Suppression Test Using 6 Year-Old-Dummy and Booster Seats (S24.2.1)
After section __ of data sheet 20
X Suppression Test Using 6 Year-Old-Dummy (S24.2.1)
After section 4 of data sheet 21

X 2. Leave the seat in the fore-aft position, seat height, and seat cushion angle used for the suppression test.

X 3. Fully recline the seat back. (S16.3.3.1.2)
__ N/A seat back not adjustable.

X 4. Place the dummy in the seat with the legs at an angle of 120 degrees to the thighs. The calves should not be touching the seat cushion. (S16.3.3.1.2)

X 5. Position the dummy midsagittal plane vertical and coincident with the seating position centerline determined in Data Sheet 14. (S16.3.3.1.3 or S16.3.3.1.4)

X 6. Hold down the dummy's thighs and push rearward on the upper torso to maximize the pelvic angle. (S16.3.3.1.5)

X 7. Set the angle between the legs and the thighs to 120 degrees. (S16.3.3.1.6)

X 8. Set the transverse distance between the centers of the front of the knees at 160 to 170 mm (6.3 to 6.7 inches). Center the knee separation with respect to the seat centerline. (S16.3.3.1.6)

Record Knee Separation 165 mm

X 9. Push rearward on the dummy's knees until the pelvis contacts the seat back, or the backs of the calves contact the seat cushion, whichever occurs first. (S16.3.3.1.6)
__Pelvis contacted seat back.
X Calves contacted seat cushion.

X 10. Gently rock the upper torso +/- 5 degrees (approximately 51 mm (2 inches)) side to side three times to reduce the friction between the dummy and the seat. (S16.3.3.1.7)

X 11. If the dummy contacts the interior move the seat rearward until a maximum clearance of 5 mm (0.2 inches) is achieved or the seat is in the closest detent position that does not cause dummy contact. (S16.3.3.1.8) If needed, extended the legs until the feet do not contact the floor pan. The thighs should be resting on the seat cushion. (S16.3.3.1.8)
X N/A No contact
__Dummy contact. Clearance set at maximum of 5mm
Measured Clearance_____ mm
__Dummy Contact. Seat set at nearest detent position.
Seat position ___ detent positions rearward of full forward
(full forward is position zero)

X 12. Verify the pelvis is not interfering with the seat bight. (S16.3.3.1.9)

X 13. Verify the dummy abdomen is properly installed. (S16.3.3.1.9)

X 14. If the seat back is adjustable, rotate the seat back forward while holding the thighs in place. Continue rotating the seat back forward until the transverse instrument platform of the dummy head is level +/- 0.5 degrees. If the head cannot be leveled using the seat back adjustment, or the seat back is not adjustable, use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle. (S16.3.3.1.9 and S16.3.3.1.10) (Check All That Apply)
__Seat back not adjustable
__Seat back not independent of driver side seat back
X Head Level Achieved. (Check all that apply)
X Head leveled using the adjustable seat back
__Head leveled using the neck bracket.
Head Angle ____0.4____ degrees
__Head Level NOT Achieved. (Check all that apply)
__Head leveled using the adjustable seat back
__Head leveled using the neck bracket.
Head Angle _____ degrees

X 15. Measure and set the pelvic angle using the pelvic angle gage TE-2504. The pelvic angle should be 20.0 degrees +/- 2.5 degrees. If the pelvic angle cannot be set to 20 degrees, minimize the angular difference. (S16.3.3.1.11)
__Pelvic angle set to 20.0 degrees +/- 2.5 degrees.
__Pelvic angle of 20.0 degrees not achieved, the angular difference was minimized.
__Record the pelvic angle. ____21.9____ degrees

X 16. Verify the transverse instrument platform of the dummy head is level +/- 0.5 degrees. Use the lower neck bracket adjustment to level the head. If a level position cannot be achieved, minimize the angle. (S16.3.3.1.9, S16.3.3.1.10, and S16.3.3.1.11)

X Head Level Achieved

Head Angle ____0.4____ degrees

__Head Level NOT Achieved.

Head Angle _____ degrees

X 17. Check the dummy for contact with interior after completing adjustments. (S16.3.3.1.12)

X No contact.

__Dummy in contact with interior.

__Seat moved Aft ___ mm from the previous position.

__Seat moved Aft ___ detent positions from the previous position.

X 18. Foot positioning. (Indicate final position achieved) (S16.3.3.2)

__18.1 Place feet flat on the toe board. OR

X 18.2 If the feet cannot be placed flat on the toe board, set the feet perpendicular to the lower leg, and rest the heel as far forward on the floor pan as possible. OR

__18.3 If the heels do not touch the floor pan, set the legs to vertical and set the feet parallel to the floor pan

X 19. Passenger arm/hand positioning. (S16.3.3.3)

X 19.1 Place the dummy's upper arms adjacent to the torso with the arm centerlines as close to a vertical longitudinal plane as possible. (S16.3.2.3.1)

X 19.2 Place the palms of the dummy in contact with the outer part of the thighs (S16.3.3.3.2)

X 19.3 Place the little fingers in contact with the seat cushion. (S16.3.3.3.3)

X 20. Adjustable head restraints

X 20.1 If the head restraint has an automatic adjustment, leave it where the system positions the restraint after the dummy is placed in the seat. (S16.3.4.1)

X N/A Vehicle does not contain automatic head restraints.

X 20.2 Adjust the head restraint to its lowest position. (S16.3.4.2)

X 20.3 Measure the vertical distance from the top most point of the head restraint to the bottom most point. Locate a horizontal plane through the midpoint of this distance. Adjust the head restraint vertically so that this horizontal plane is aligned with the center of gravity (CG) of the dummy head. (S16.3.4.3)

Vertical height of head restraint 248 mm

Mid-point height 124 mm

X 20.4 If the above position is not attainable, move the vertical center of the head restraint to the closest detent below the center of the head CG. (S16.3.4.3)

__N/A midpoint position attained in previous step

X Head rest set at nearest detent below the head CG

X 20.5 If the head restraint has a fore and aft adjustment, place the restraint in the foremost position or until contact with the head is made, whichever occurs first. (S16.3.4.4)

X 21. Start the vehicle engine or place the ignition in the "on" position, whichever will turn on the suppression system, and close all vehicle doors. (S22.2.1.7) Wait 10 seconds, and then check whether the air bag is suppressed. (S22.2.1.8)

__Air Bag Suppressed – **FAIL**

X Air Bag Not Suppressed – Pass

X 22. Return the ignition switch to the "off" position.

TB / JL 2-10-04

I certify that I have read and performed each instruction. Date

Engineer: Jeff Lewandowski Date: 2-10-04

Suppression Failure Investigation Documentation

Ford F-150 C40200 1FTRF12W84N[redacted]

2-10-04
The vehicle did not meet the performance requirements of S.22.2.2.1 6-year-old unbelted Position 1. (Sitting on seat with back against seat back) Successive tests with this position yielded an 80% failure rate. The failure mode was also seen on the initial dummy seating of Position 4. (Leaning on the door) The dummy was not suppressed until it was leaned on the door. An un-interrupted videotape of the entire test procedure was submitted to Ford on 2-10-04. The failure was readily duplicated and documented on the videotape.

2-13-04
Representatives from Ford and Delphi were on site at MGA on 2-13-2004. The failures were initially duplicated without disturbance or changes to any vehicle systems. The failures were then investigated with an OCS diagnostic computer system provided by Delphi. This system monitored the OCS while still leaving the system functional. The vehicle system was restored to its original state after the investigation. The vehicle was moved to the secure MGA compound.

3-12-04
Supplemental 6-year-old unbelted seatings with Ford and Delphi representatives were performed on 3-12-04. The 2004 Ford F-150 6-year-old Suppression Test Plan dated 3-9-04 was performed. The test plan follows this document in the report. The Occupant Classification System was able to dynamically recalibrate while driving on the MGA test track. After the recalibration the system successfully suppressed the 6-year-old unbelted dummy in Position 1.

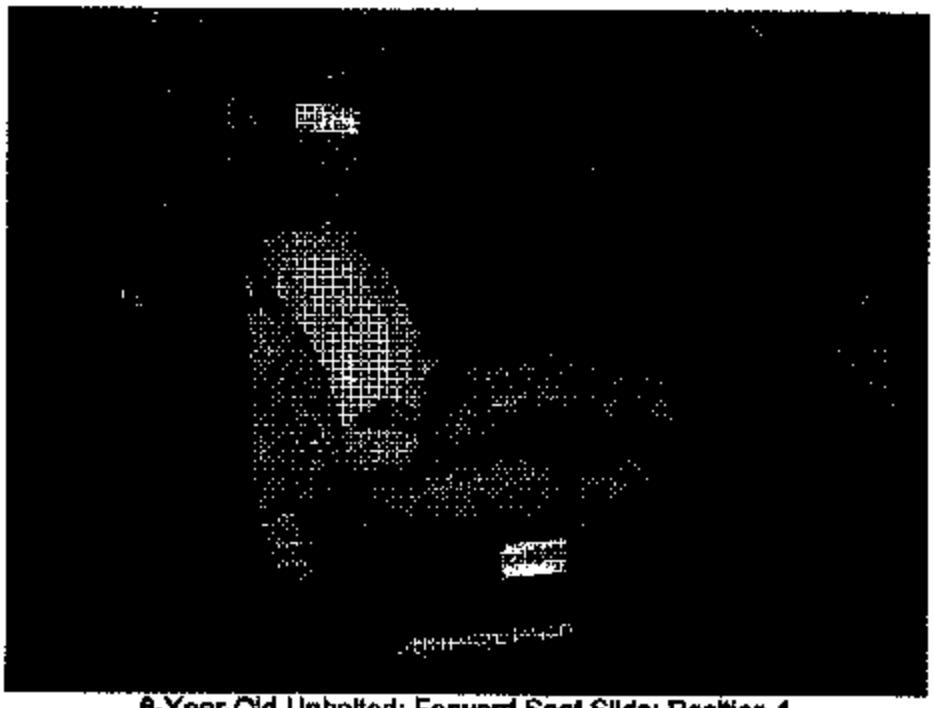
3-15-04
Supplemental 6-year-old unbelted Position 1 seatings were performed on 3-15-04. They were performed using 6-year-old dummy SN111. There were no test failures. A table of the results and photos of the tests are shown below:

Test Summary

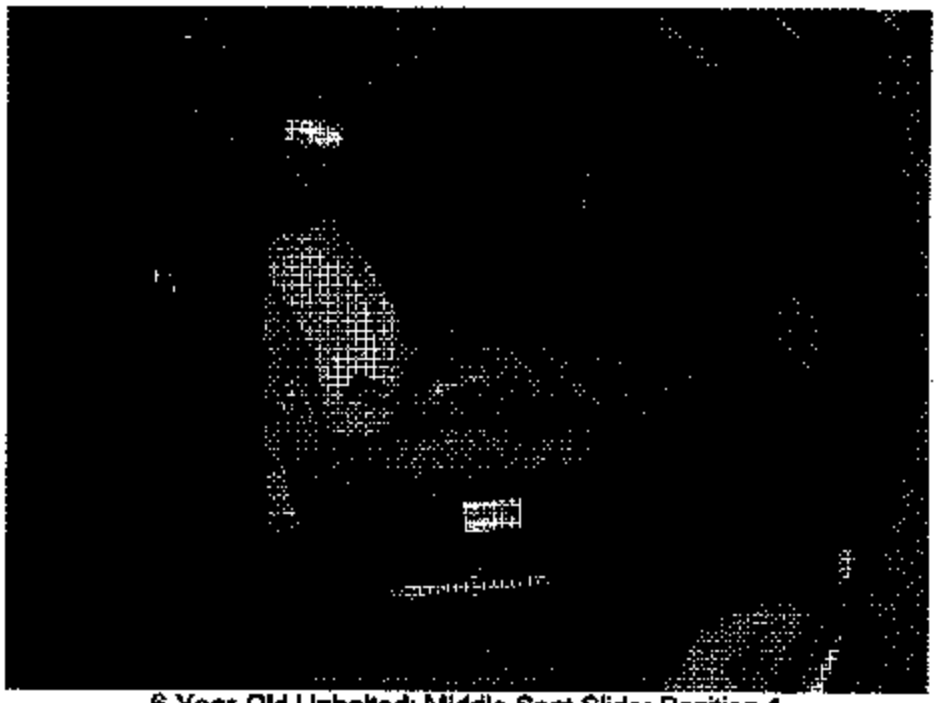
Position	Seat Slide	Seat Back Angle	Result
Position 1 Sitting on seat with back against seat back	Forward 9	18.5	Suppressed *
	Middle	18.5	Suppressed
	Rearward	18.5	Suppressed

Successful Unbelted 5th percentile Female Dummy Reactivation was performed with the seat in the Rearward position. (SN513)

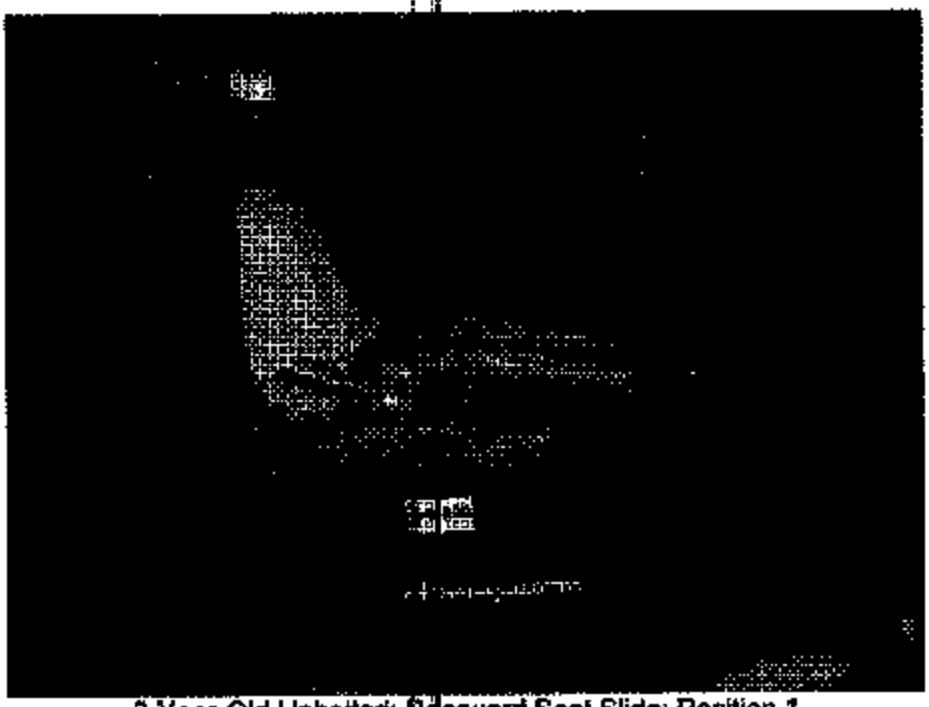
* The Dummy would not fit in this unmodified Seat Slide position. Each fore-aft seat position is numbered beginning with the foremost position as 1. If there is a number in the Seat Slide column, it indicates the fore-aft seat position with respect to the foremost position. (23 positions total)



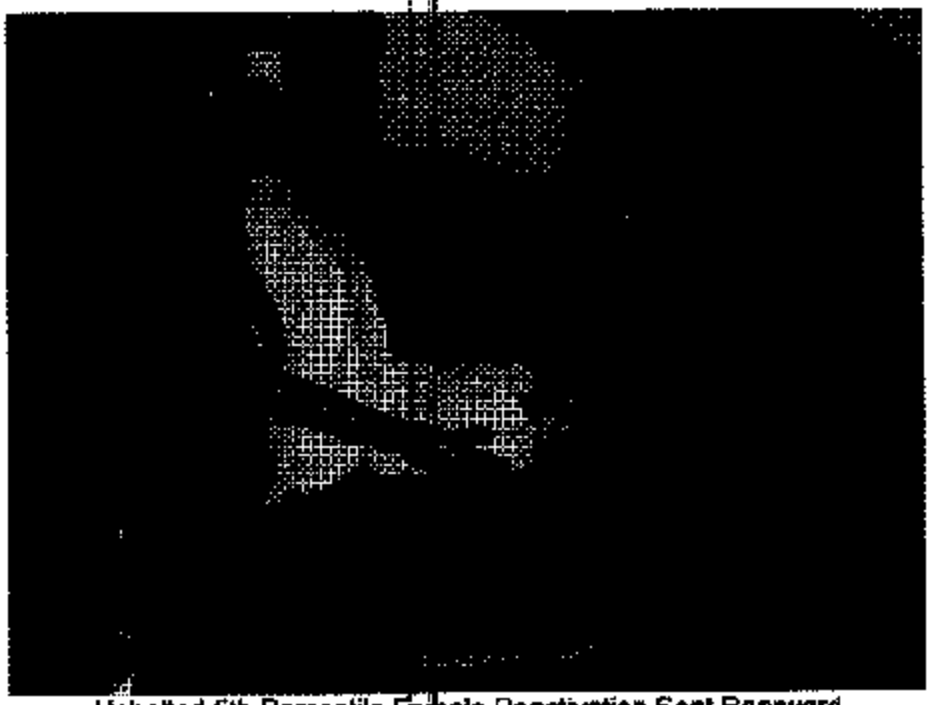
6-Year-Old Unbelted; Forward Seat Slide; Position 1



6-Year-Old Unbelted; Middle Seat Slide; Position 1



6-Year-Old Unbelted; Rearward Seat Slide; Position 1



Unbelted 5th Percentile Female Reactivation Seat Rearward

Need DELPHI butt form and weight, and equipment to read RCM

1. Verify battery is charged. Charge if necessary.

Empty seat key cycling

2. Let vehicle sit indoors for a minimum of two hours with key off and windows open.
3. Cycle the ignition key to the on position (keep the key on until the gain readings are taken or until the suppression light cycles whichever occurs later)
4. Record empty seat gain reading
5. Let vehicle sit with key off for 2 minutes
6. Cycle the ignition key to the on position (keep the key on until the gain readings are taken or until the suppression light cycles whichever occurs later)
7. Record empty seat gain reading
8. Let vehicle sit with key off for 2 minutes
9. Cycle the ignition key to the on position
10. Record empty seat gain reading
11. Leave key in the on position for 15 minutes
12. Record the empty seat gain readings at 1 minute intervals

58 lb butt form key cycling

13. Let vehicle sit for 30 minutes with key off.
14. Place 58 lb butt form on the seat
15. Cycle the ignition key to the on position (keep the key on until the gain readings are taken or until the suppression light cycles whichever occurs later)
16. Record seat gain reading
17. Let vehicle sit with key off for 2 minutes
18. Cycle the ignition key to the on position (keep the key on until the gain readings are taken or until the suppression light cycles whichever occurs later)
19. Record seat gain reading
20. Let vehicle sit with key off for 2 minutes
21. Cycle the ignition key to the on position
22. Record seat gain reading
23. Leave key in the on position for 15 minutes
24. Record the seat gain readings at 1 minute intervals

Suppression with 6-year-old dummy

25. Remove the butt form, seat 6-year-old dummy using data sheet 21, item 1 (position 1)
26. Verify suppression/no suppression
27. Record gain reading
28. Remove the dummy
29. Record empty seat gain reading
30. Let the vehicle sit indoors for 30 minutes with the key off and windows open
31. Record empty seat gain reading
32. Seat 6-year-old dummy using data sheet 21, item 1 (position 1)
33. Verify suppression/no suppression

34. Record gain reading
35. Record empty seat gain readings
36. Record 58 lb butt form gain readings

Driving vehicle effect

37. Drive vehicle for 15 minutes with no passenger seat load
38. Seat 6-year-old using data sheet 21, item 1 (position 1)
39. Verify suppression/no suppression
40. Record gain reading
41. Record empty seat gain readings
42. Record 58 lb butt form gain readings
43. Drive vehicle for 15 minutes with no passenger seat load
44. Seat 6-year-old using data sheet 21, item 1 (position 1)
45. Verify suppression/no suppression
46. Record gain reading
47. Record empty seat gain readings
48. Record 58 lb butt form gain readings
49. Drive vehicle for 15 minutes with no passenger seat load
50. Seat 6-year-old using data sheet 21, item 1 (position 1)
51. Verify suppression/no suppression
52. Record gain reading
53. Record empty seat gain readings
54. Record 58 lb butt form gain readings

Battery test

55. Disconnect and reconnect the battery
56. Record empty seat gain reading
57. Record 58 lb butt form gain readings

I:\CCase\2004 F-150 suppression\suppression test plan.doc