HSNO. 637420

REPORT NUMBER 103-GTL-04-002

SAFETY COMPLIANCE TESTING FOR FMVSS NO. 103 WINDSHIELD DEFROSTING AND DEFOGGING SYSTEMS

FORD MOTOR CO. IN U.S.A.
2004 LINCOLN LS, PASSENGER CAR
NHTSA NO. C40210

GENERAL TESTING LABORATORIES, INC.
1623 LEEDSTOWN ROAD
COLONIAL BEACH, VIRGINIA 22443

SEPTEMBER 13, 2004

FINAL REPORT

PREPARED FOR

U. S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
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Approval Date: 9/13/04

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Final Report of FMVSS 103 Compliance Testing of 2004 LINCOLN LS, PASSENGER CAR NHTSA No. C40210	September 13, 2004
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	14. Sponsoring Agency Code NVS-220

15. Supplementary Notes

16. Abstract

Compliance tests were conducted on the subject, 2004 Lincoln LS Passenger Car in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-103-13 for the determination of FMVSS 103 compliance.
Test failures identified were as follows:
NONE

17. Key Words	18. Distribution Statement
Compliance Testing Safety Engineering FMVSS 103	Copies of this report are available from NHTSA Technical Information Services (TIS) Room 2336 (NP0-405) 400 7th St., S.W. Washington, DC 20590 Telephone No. (202) 366-4947

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SECTION 1

PURPOSE OF COMPLIANCE TEST

1.0 PURPOSE OF COMPLIANCE TEST

A 2004 Lincoln LS Passenger Car was subjected to Federal Motor Vehicle Safety Standard (FMVSS) No. 103 testing to determine if the vehicle was in compliance with the requirements of the standard. All tests were conducted in accordance with NHTSA, Office of Vehicle Safety Compliance (OVSC) Laboratory Procedure, TP-103-13 dated 26 June 1996 and General Testing Laboratories, Inc. (GTL) Test Procedure, "Windshield Defrosting and Defogging Systems -- Passenger Vehicles, Mulitpurpose Vehicles, Trucks and Buses".

1.1 TEST VEHICLE

The test vehicle was a 2004 Lincoln LS Passenger Car. Nomenclature applicable to the test vehicle are:

A. Vehicle Identification Number: 1LNHM86S44Y632047

B. NHTSA No.: C40210

C. Manufacturer: FORD MOTOR CO. IN U.S.A.

D. Manufacture Date: 11-03

1.2 TEST DATE

The test vehicle was subjected to FMVSS No. 103 testing on August 10-11, 2004.

SECTION 2

COMPLIANCE TEST PROCEDURE AND SUMMARY OF RESULTS

2.0 GENERAL

The 2004 Lincoln LS 4-door passenger car, NHTSA No. C40210 was subjected to FMVSS No. 103 tests on August 10-11, 2004. Photographs of the test vehicle are shown in Figures 5.1 through 5.4. The manufacturer's certification and tire information label is shown in Figure 5.5. The test instrumentation and instrument panel setups are depicted in Figures 5.6 and 5.7. Figures 5.8 through 5.15 depict the windshield pre and post test defrost conditions.

2.1 TEST PROCEDURE

Prior to test the test vehicle was inspected for completeness, systems operability, and appropriate fuel and liquid levels, i.e., oil and coolant to include antifreeze protection. The vehicle was then photographically documented as required by the DOT/NHTSA test procedure. The windshield patterns for areas A, B and C had been furnished prior to testing and these areas were outlined on the windshield with a marker. The vehicle was then installed in the cold chamber and pre-conditioned for a 14-hour minimum, 0° ±5° F temperature soak for the first test run. After the pre-condition, the hood was raised to assure engine coolant and lubricant were stabilized within the test temperature range for a minimum of 2 hours.

At the end of the 2-hour minimum stabilization period, the entire windshield was sprayed evenly with 0.010 ounces of water per square inch of glass area. Refer to Section 3, Compliance Test Data, for test specifics such as total amount of water sprayed, spray gun identification, and air pressure regulation. The vehicle soak continued for an additional 30 minutes minimum but no more than 40 minutes after the windshield was sprayed.

At the conclusion of the additional soak time the vehicle's engine was started and operated at a target speed of 1500-1600 rpm or at the manufacturer's specification if different as noted on data sheets. The defroster blower was turned on to the high speed setting with the heater selector in the de-ice (defrost) position, and the temperature control in the maximum temperature position. All doors and windows were closed. The heater air intake was fully open and the vehicle's hood closed. At no time during the test were the windshield wipers used.

SECTION 2 continued

At start of testing and during test, at each 5-minute interval after engine start, cold chamber, engine coolant, heater coolant in and defroster air left/defroster air right temperatures were recorded. Likewise at each 5-minute interval the boundary of the defrosted area was marked on the inside surface of the windshield. The test was run for a maximum of 40 minutes from engine start, or until such time as 100 percent windshield clearance was achieved. Photographs were made of the windshield at the pre-test frosted state and 20-minute and 25-minute intervals. Post test actions included placing a vellum pattern on the windshield and tracing the windshield's 5-minute interval defrosted area boundary lines onto the vellum pattern.

After the traces were obtained, the windshield was again thoroughly cleaned and the vehicle engine coolant and lubricant stabilization period at 0° ±5° F temperature commenced for the second test which entailed a repeat of the procedure discussed. The windshield patterns for both tests were used subsequently to determine the cleared area percentages.

2.2 SUMMARY OF RESULTS

Based on the test performed, the test vehicle appears to be in compliance with the requirements of FMVSS 103.

SECTION 3

COMPLIANCE TEST DATA

3.0 TEST RESULTS

The following data sheets document the results of testing on the 2004 Lincoln LS.

SUMMARY DATA SHEET
FMVSS 103, WINDSHIELD DEFROSTING AND DEFOGGING SYSTEMS

VEH. MOD YR/MAKE/MODEL/BODY: 2004 LINCOLN LS PASSENGER CAR
VEH. NHTSA NO: C40210; VIN: 1LNHM86S44Y632047
VEH. BUILD DATE: 11-03 TEST DATE: AUGUST 10-11, 2004
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

WINDSHIELD AREA: 1996.8 in^2 AREA C = 269.7 in^2 AREA D = 269.7 in^2 AREA A = 1310.7 in^2

MANUFACTURER'S WINDSHIELD PATTERN USED: Yes X No

ENGINE THERMOSTAT NOMINAL REGULATING TEMPERATURE: * °F

HEATER-DEFROSTER SYSTEM INCLUDES AIR CONDITIONER: YES X NO

DESCRIBE UNUSUAL FEATURES OF DEFROSTING SYSTEM:

DESCRIBE UNUSUAL FEATURES OF TEST CAR:

DESIGNATION	AREA PERCENT DEFROSTED					
	TEST 1	TEST 2	AVG	REQ'D	PASS	FAIL
CRITICAL AREA C AT 20 MINUTES	100%	100%	100%	80% MINIMUM	PASS	
PASSENGER AREA D AT 25 MINUTES	100%	100%	100%	80% MINIMUM	PASS	
TOTAL AREA A AT 40 MINUTES	100%	100%	100%	95% MINIMUM	PASS	

REMARKS: *Vehicle manufacturer did not specify thermostat opening temperature, but did state that the thermostat did not open during FMVSS 103 certification testing.

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APPROVED BY: [signature]

FMVSS 103 TEST DATA RECORD – TEST RUN NO. 1

VEH. MOD YR/MAKE/MODEL/BODY: 2004 LINCOLN LS PASSENGER CAR
VEH. NHTSA NO: C40210; VIN: 1LNHM86S44Y632047
VEH. BUILD DATE: 11-03 ; TEST DATE: AUGUST 10, 2004
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

If 1st Test Run, chamber conditioned 16 hours @ 0° ±5° F (14 hrs. min.)

Cold Soak Period: 16 HOURS

Time engine coolant and lubricant remained stabilized at 0° F: 12 hrs. 0 minutes

Water Spray Gun and Nozzle Type: BINKS #66

Spray Gun Pressure: 50 psi (50 psi ± 3 psi)

Water used: 20.0 fluid oz. (0.010 ounces per square inch of windshield area)

Soak Period Between Ice Application and Test Start: 34 minutes (30 to 40 minutes)

Engine Speed: 1500 to 1700 rpm (Target engine speed1500 to 1600 rpm) (Note: Tried to average 1550 rpm but engine computer would not hold a steady rpm)

Wind at specified location in front of windshield: 1.1 mph (0 to 2 mph)

Number of Vehicle Occupants: 2 (2 maximum)

Describe window openings, if any: NONE

TIME FROM START (minutes)	MOTOR VOLTAGE (volts)	TEMPERATURE, °F					DEFROSTED AREA, %		
		TEST ROOM	ENGINE WATER	HEATER WATER IN	DEFROSTER AIR DRVR	DEFROSTER AIR PSGR	A	C	D
0	13.5	-3.8	-3.1	-2.5	-1.4	-1.0	0%	0%	0%
5	14.5	-1.6	117.0	103.9	66.4	71.9	7.3%	0%	0%
10	14.5	1.0	148.4	131.2	95.4	99.9	36.6%	43.7%	39.6%
15	14.4	3.8	171.4	155.3	116.5	121.1	66.5%	96.0%	96.0%
20	14.4	6.6	183.2	165.7	128.6	133.5	100%	100%	100%
25	14.4	8.2	192.3	174.3	137.7	142.3	100%	100%	100%
30									
35									
40									

REMARKS:

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APPROVED BY: [signature]

FMVSS 103 TEST DATA RECORD – TEST RUN NO. 2

VEH. MOD YR/MAKE/MODEL/BODY: 2004 LINCOLN LS PASSENGER CAR
VEH. NHTSA NO: C40210; VIN: 1LNHM86S44Y632047
VEH. BUILD DATE: 11-03 ; TEST DATE: AUGUST 11, 2004
TEST LABORATORY: GENERAL TESTING LABORATORIES
OBSERVERS: GRANT FARRAND, JIMMY LATANE

If 1st Test Run, chamber conditioned N/A hours @ 0° ±5° F (14 hrs. min.)

Cold Soak Period: 22 HOURS

Time engine coolant and lubricant remained stabilized at 0° F: 20 hrs. 0 minutes

Water Spray Gun and Nozzle Type: BINKS #66

Spray Gun Pressure: 50 psi (50 psi ± 3 psi)

Water used: 20.0 fluid oz. (0.010 ounces per square inch of windshield area)

Soak Period Between Ice Application and Test Start: 35 minutes (30 to 40 minutes)

Engine Speed: 1500 to 1800 rpm (Target engine speed 1500 to 1600 rpm)(Note: Tried to average 1550 rpm but engine computer would not hold a steady rpm)

Wind at specified location in front of windshield: 1.2 mph (0 to 2 mph)

Number of Vehicle Occupants: 2 (2 maximum)

Describe window openings, if any: NONE

TIME FROM START (minutes)	MOTOR VOLTAGE (volts)	TEMPERATURE, °F					DEFROSTED AREA, %		
		TEST ROOM	ENGINE WATER	HEATER WATER IN	DEFROSTER AIR DRVR	DEFROSTER AIR PSGR	A	C	D
0	13.5	-4.7	-5.0	-5.0	-4.6	-4.3	0%	0%	0%
5	14.5	-4.0	118.2	101.5	65.4	70.9	0%	0%	0%
10	14.5	-1.2	142.7	126.2	89.1	93.4	29.6%	26.0%	27.5%
15	14.5	1.4	157.2	141.0	104.7	108.4	54.5%	76.0%	81.3%
20	14.4	3.5	169.1	150.9	115.5	119.2	96.4%	100%	100%
25	14.4	6.7	177.8	159.9	125.3	130.1	100%	100%	100%
30									
35									
40									

REMARKS:

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APPROVED BY: [signature]

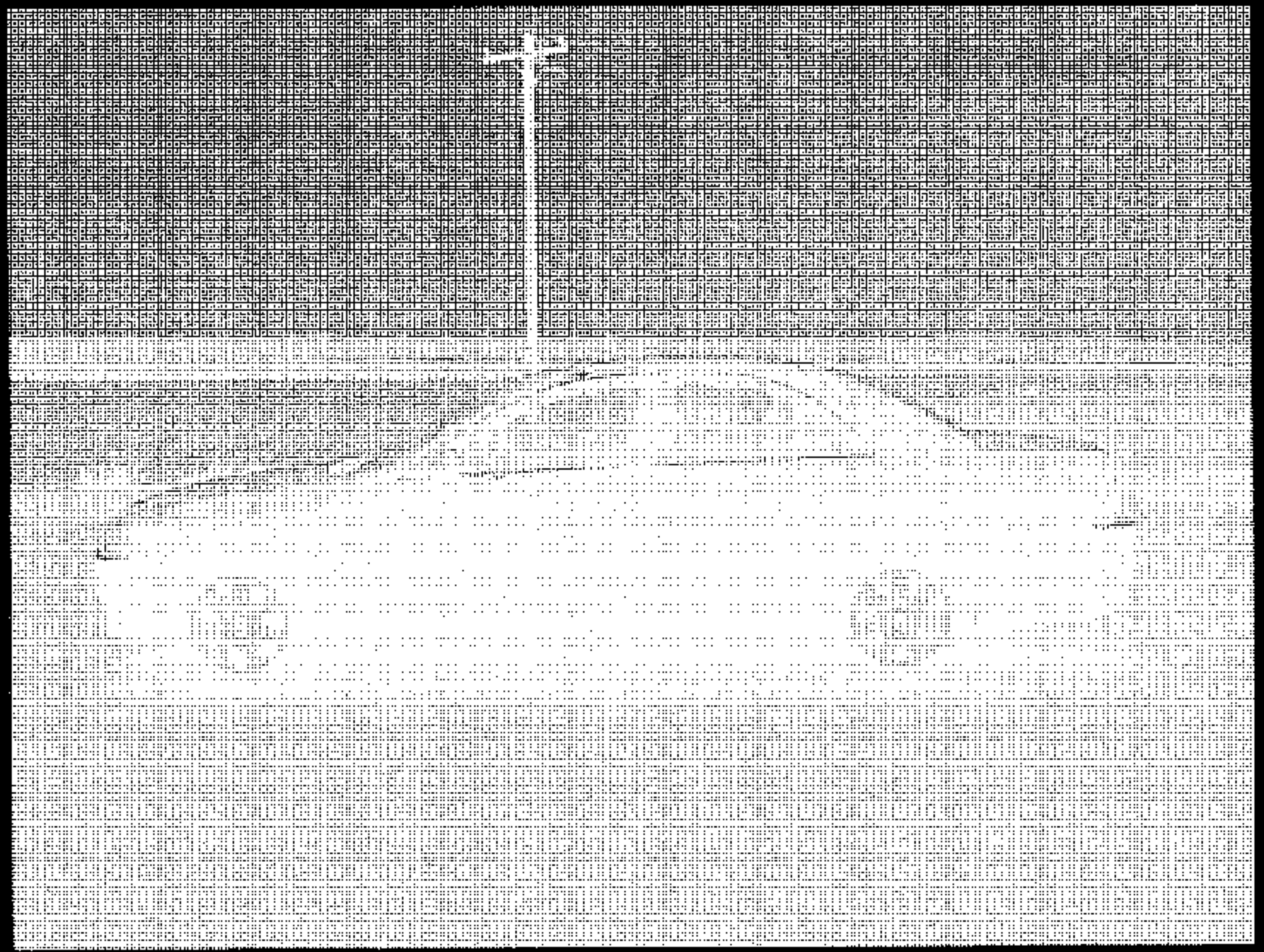
SECTION 4
INSTRUMENTATION AND EQUIPMENT LIST

TABLE 1 - INSTRUMENTATION & EQUIPMENT LIST

EQUIPMENT	DESCRIPTION	MODEL/ SERIAL NO.	CAL. DATE	NEXT CAL. DATE
TIMER	ACCU-SPLIT	ACT2	07/04	07/05
TEMPERATURE READOUT	OMEGA	43P	03/04	03/05
TEMPERATURE RECORDER	OMEGA	CT91	03/04	03/05
SPRAY GUN	BINKS	6655	BEFORE USE	BEFORE USE
ANEMOMETER	HASTINGS	RM-1, 46	05/04	05/05
AIR PRESSURE GAGE	BINKS	0-160	02/04	02/05
SCALE	METTLER	200A4M	02/04	02/05
TACHOMETER	MONARCH	ACT-3	07/04	07/05
GRADUATED BEAKER	PHOTAX	N/A	N/A	N/A
EVENT RECORDER	COMPUTER	GEO1	BEFORE USE	BEFORE USE
DATA LOGGER	FLUKE	7471026	03/04	03/05

SECTION 5

PHOTOGRAPHS

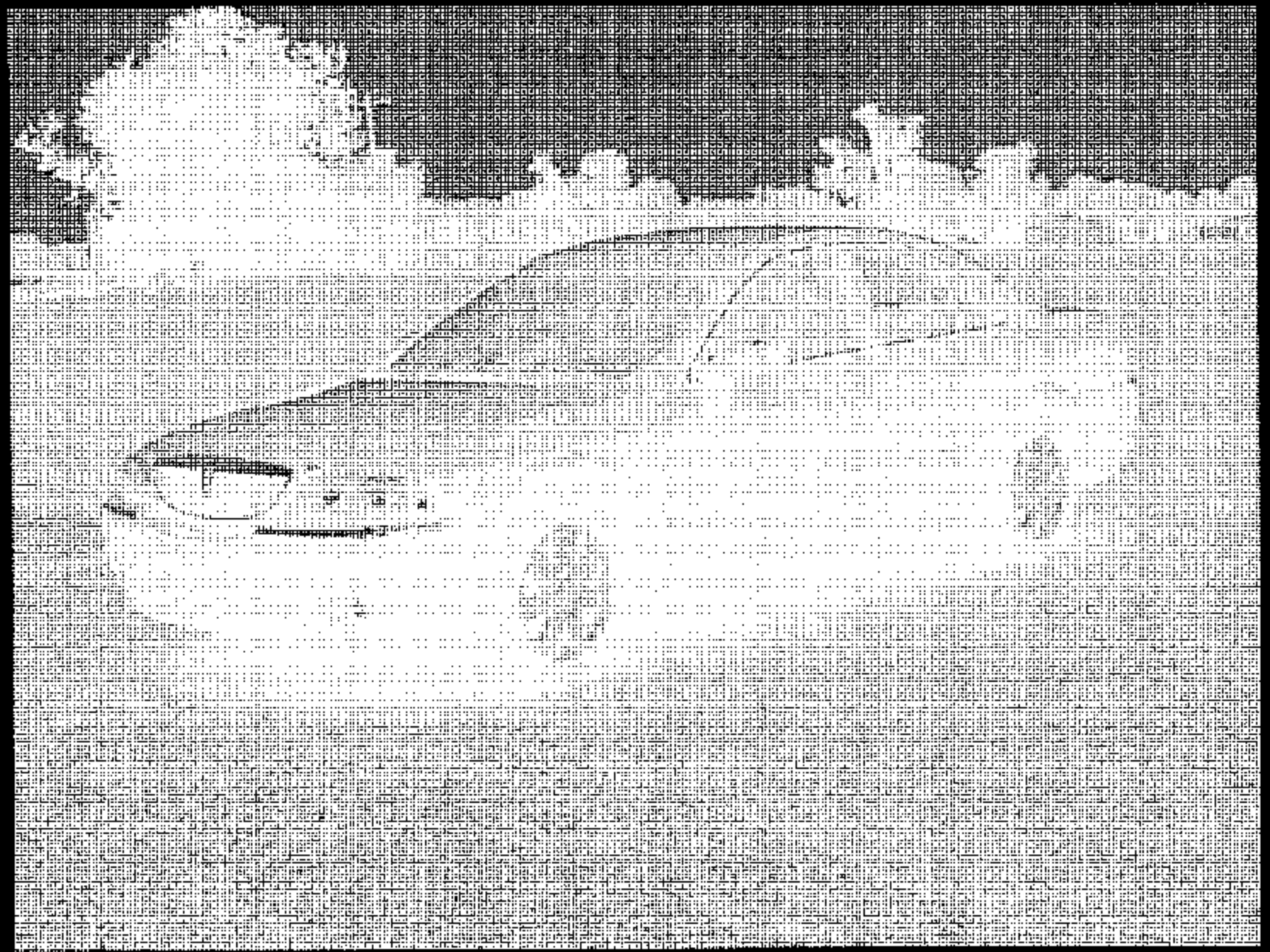


2004 LINCOLN LS
NHTSA NO. C40210
FMVSS NO. 103

FIGURE 5.1
LEFT SIDE VIEW OF VEHICLE

2004 LINCOLN LS
NHTSA NO. C40210
FMVSS NO. 103

FIGURE 5.2
RIGHT SIDE VIEW OF VEHICLE



2004 LINCOLN LS
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FIGURE 5.3
¾ FRONTAL VIEW FROM LEFT SIDE OF VEHICLE

2004 LINCOLN LS
NHTSA NO. C40210
FMVSS NO. 103

FIGURE 5.4
¾ REAR VIEW FROM RIGHT SIDE OF VEHICLE

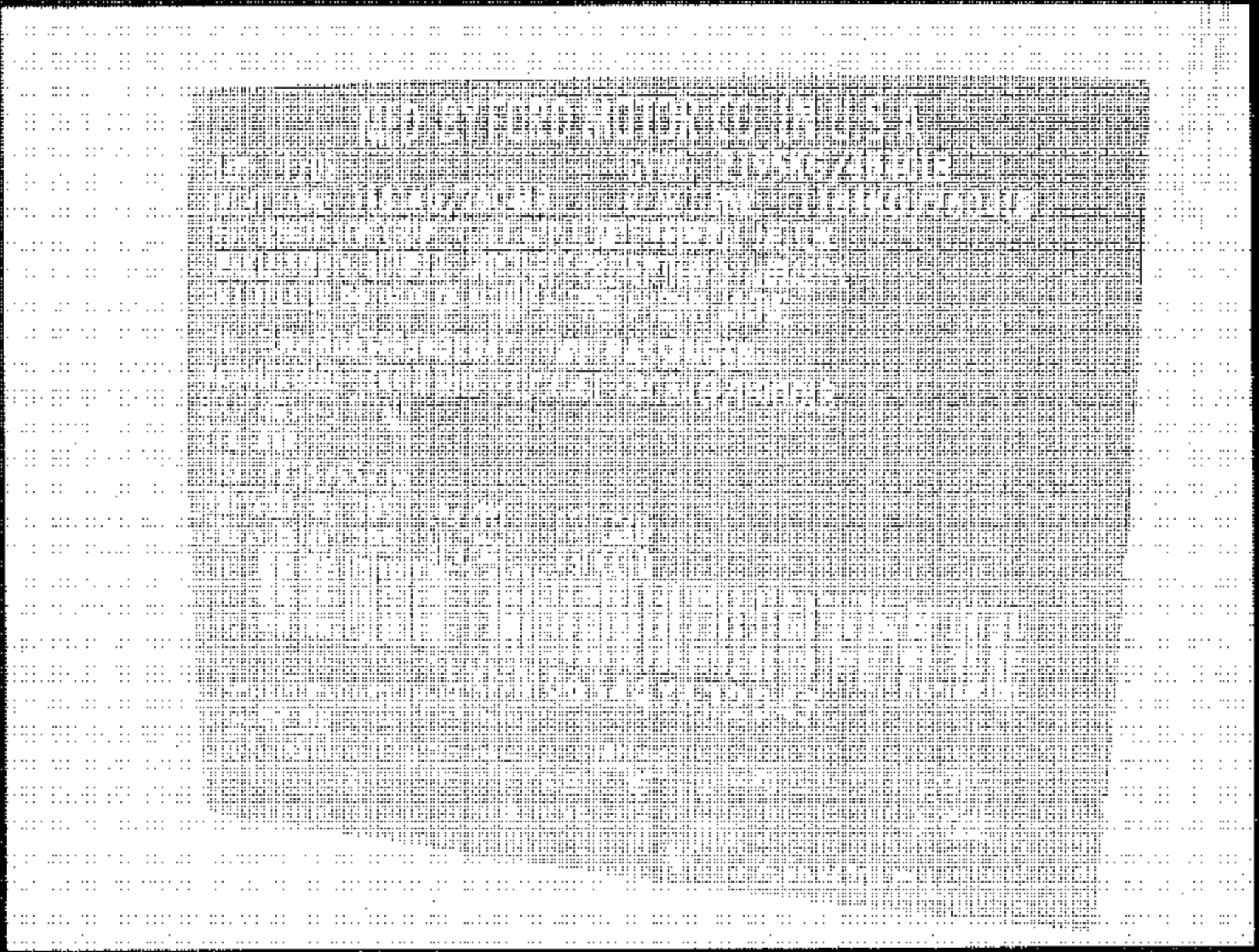

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FIGURE 5.5
VEHICLE CERTIFICATION AND TIRE INFORMATION LABEL

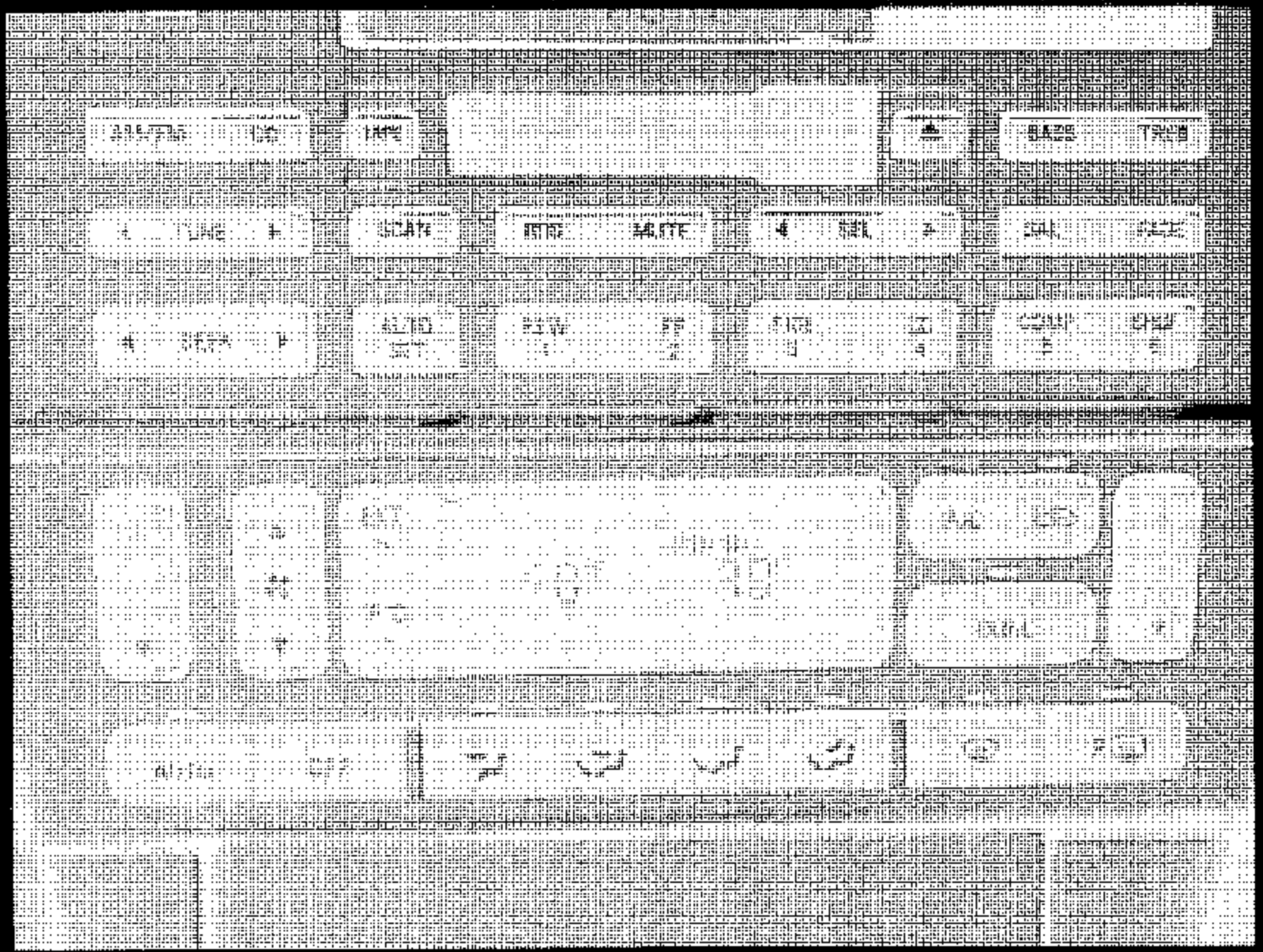

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FIGURE 5.6
CLOSE-UP VIEW OF DEFROSTER CONTROL SETTING ON DASH

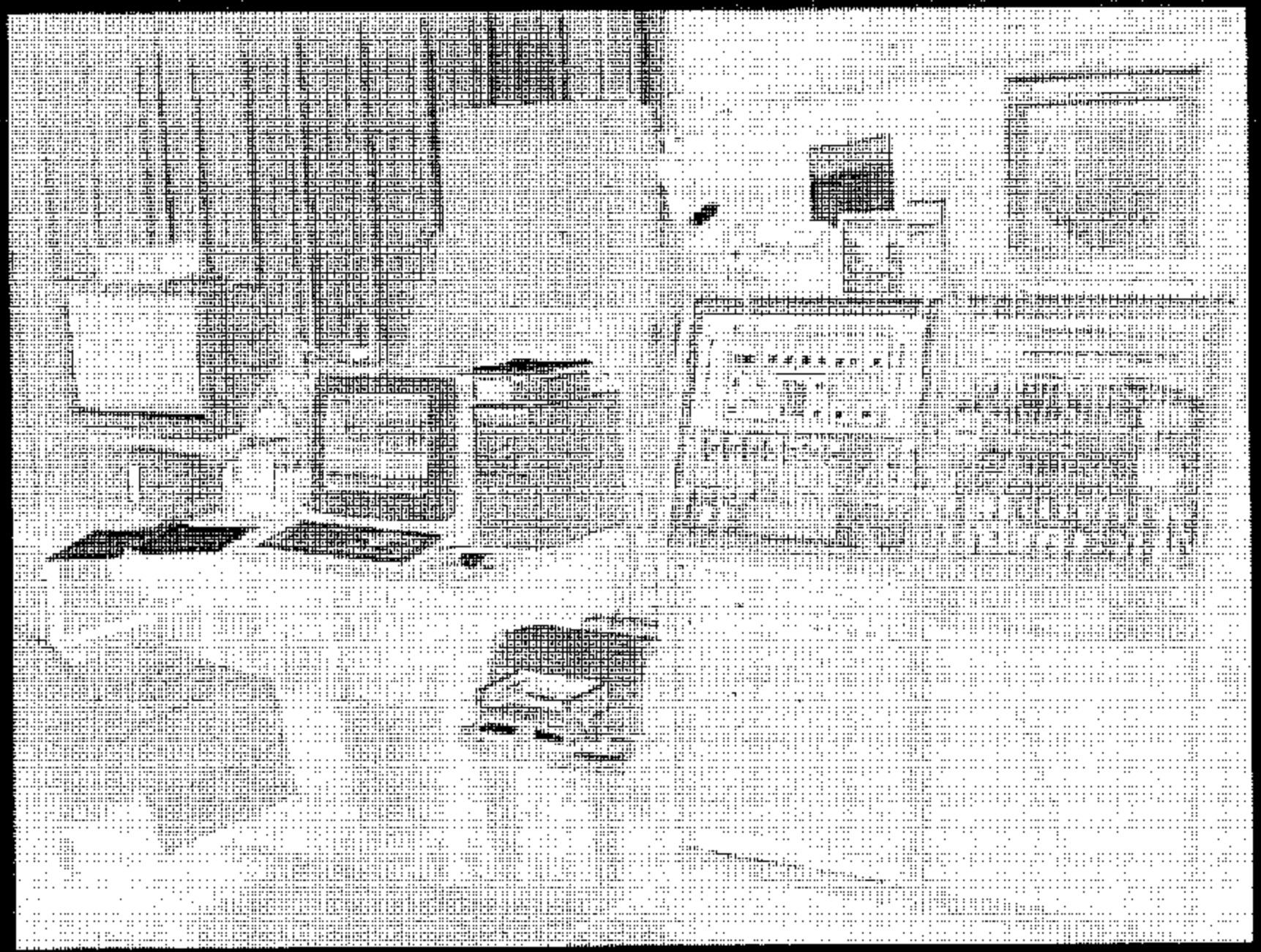

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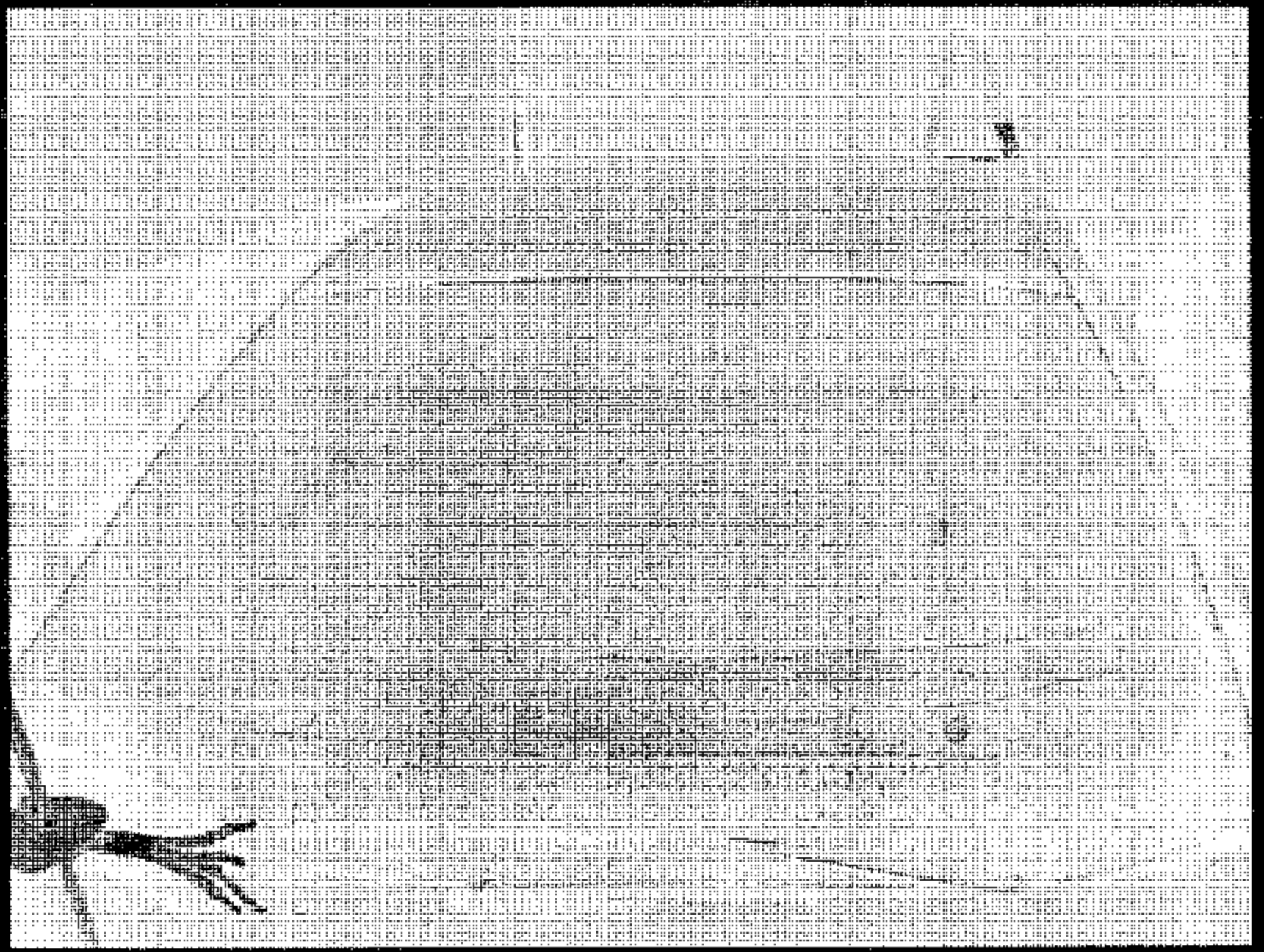
FIGURE 5.7
INSTRUMENTATION SET-UP



2004 LINCOLN LS
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FIGURE 5.8
WINDSHIELD, PRE-TEST FROSTED STATE
TEST #1

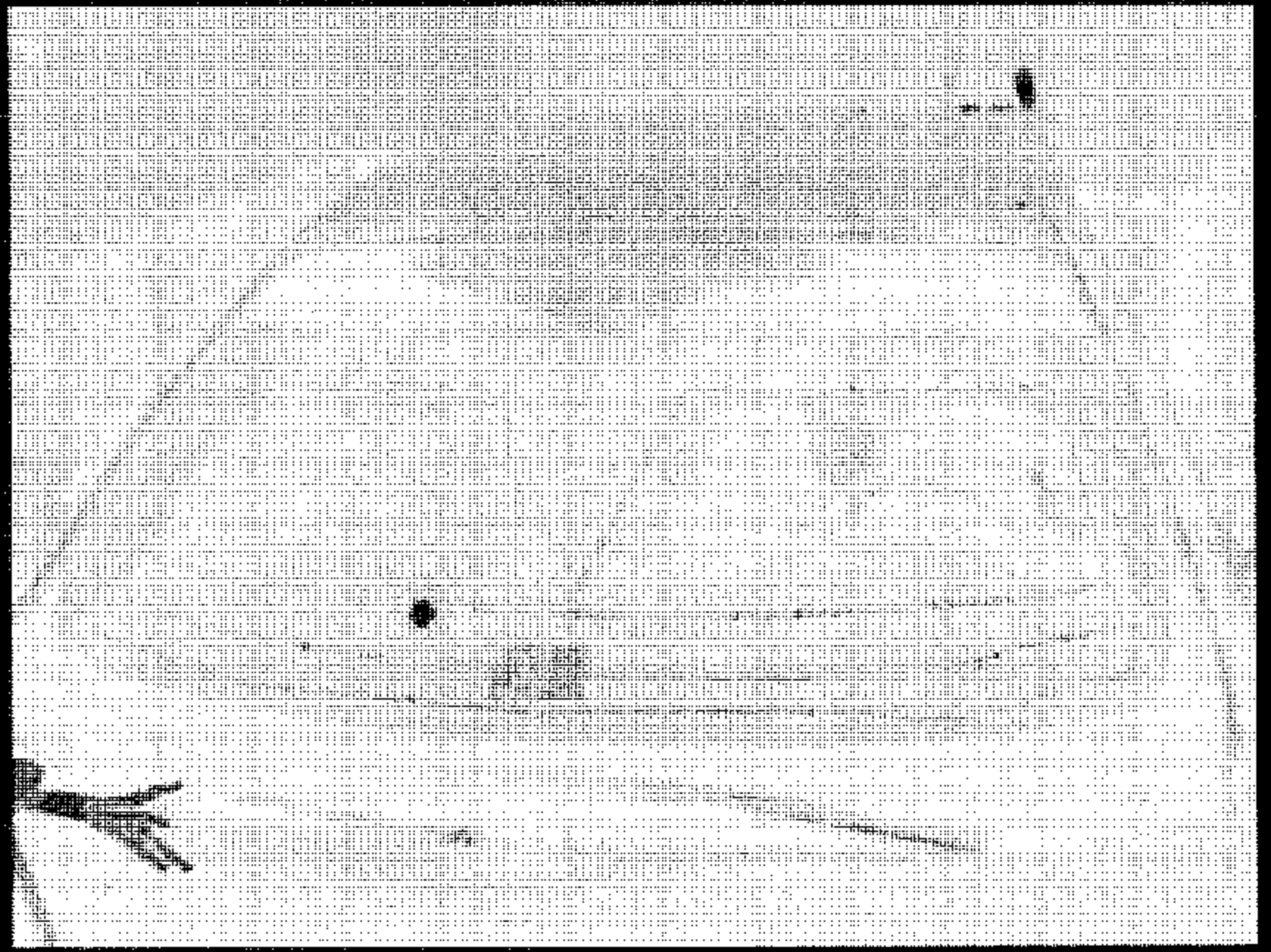

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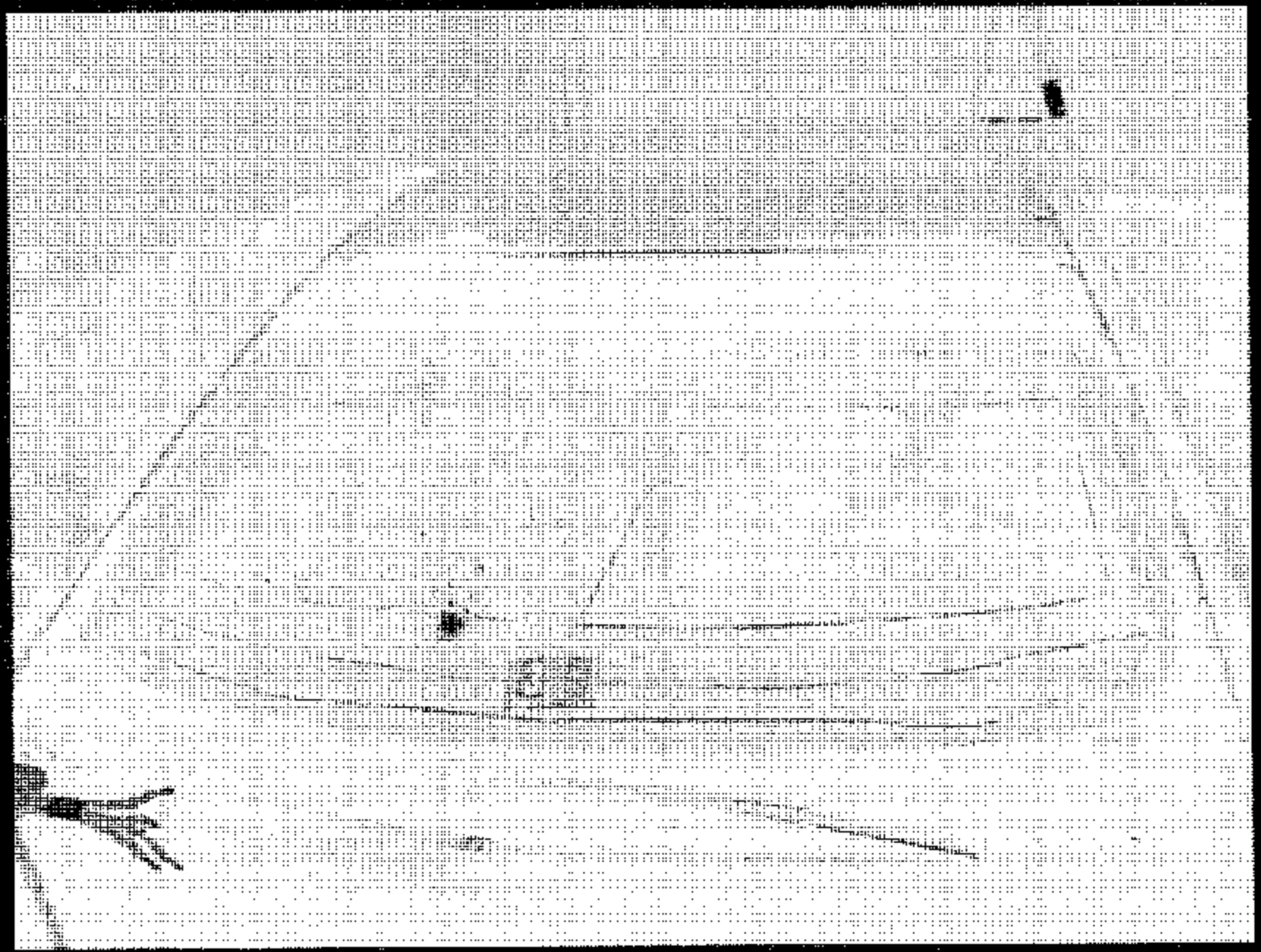
FIGURE 5.9
DEFROSTED AREA AT 20 MINUTES
TEST #1



2004 LINCOLN LS
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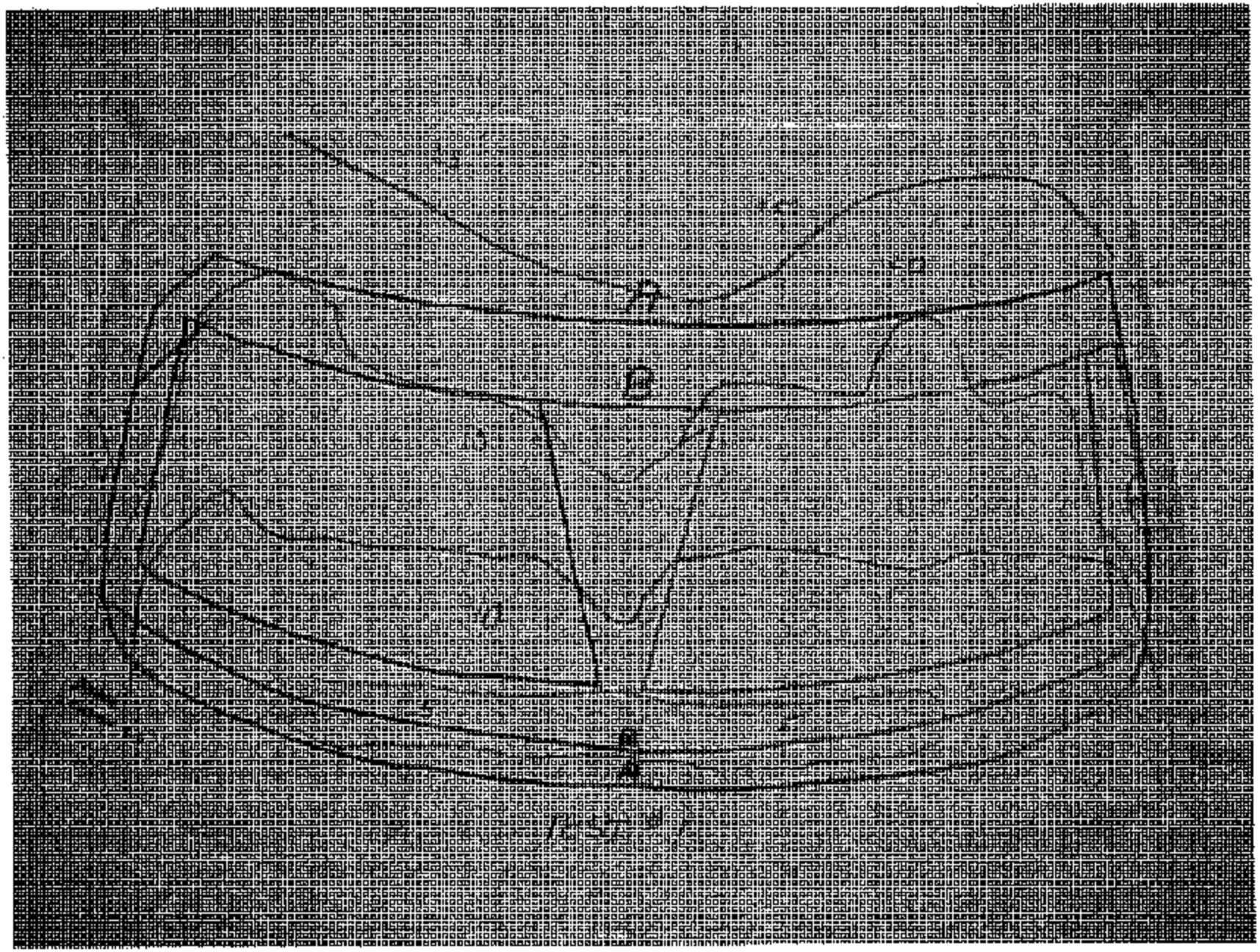
FIGURE 5.10
DEFROSTED AREA AT 25 MINUTES
TEST #1 END OF TEST



2004 LINCOLN LS
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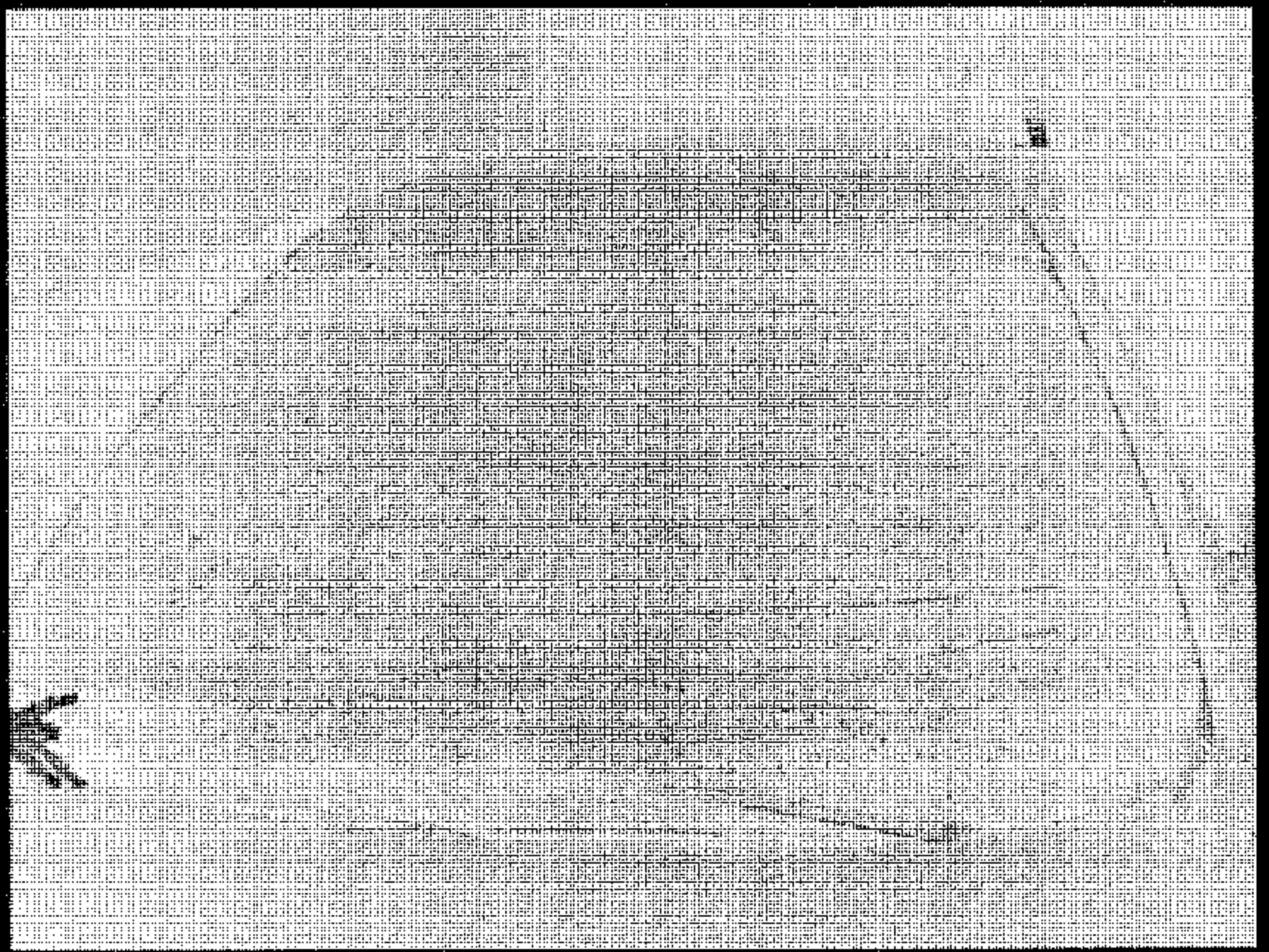
FMVSS NO. 103

FIGURE 5.11
WINDSHIELD VELLUM PATTERN, POST TEST #1



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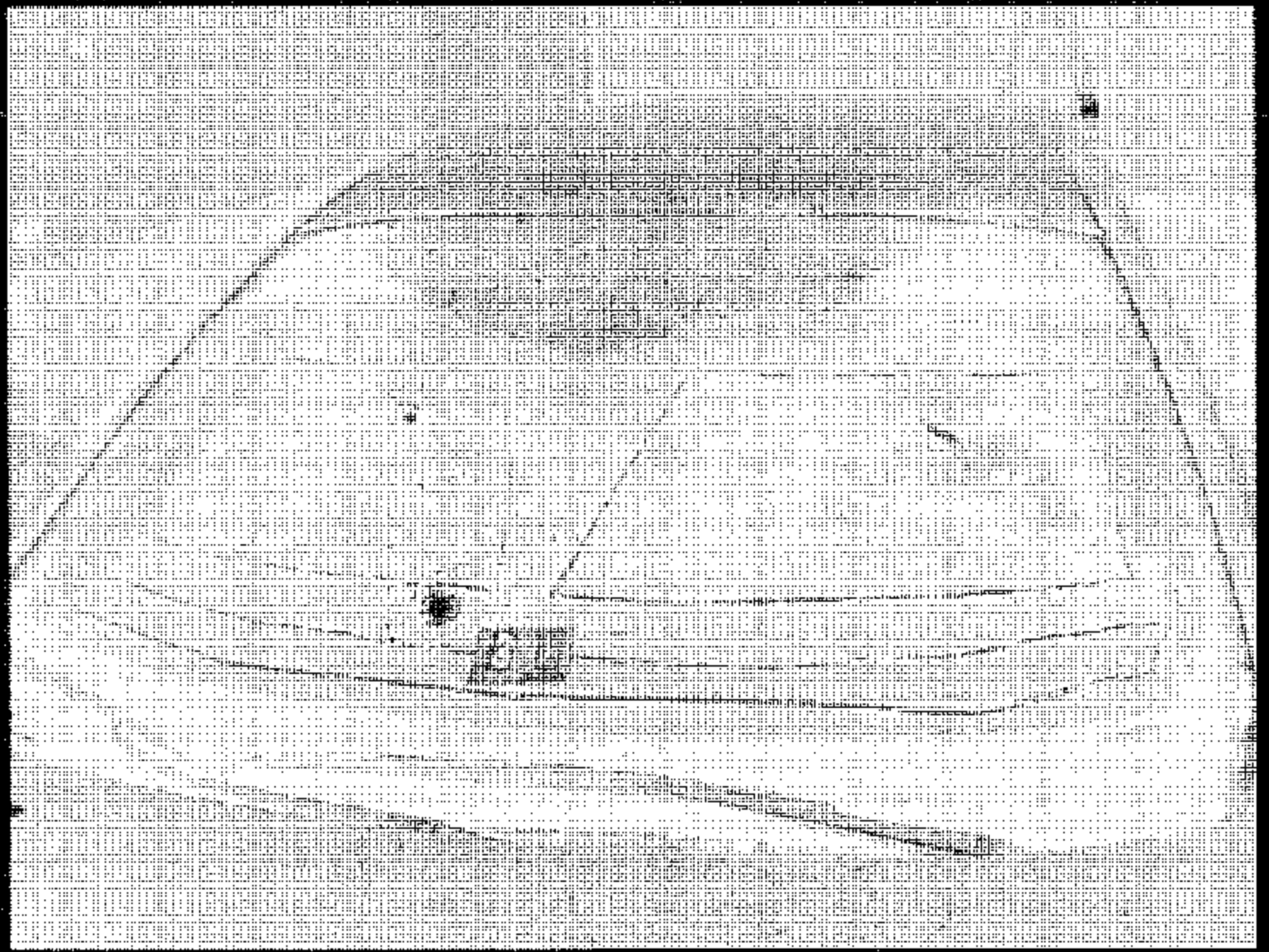
FMVSS NO. 103

FIGURE 5.12
WINDSHIELD, PRE-TEST FROSTED STATE
TEST #2



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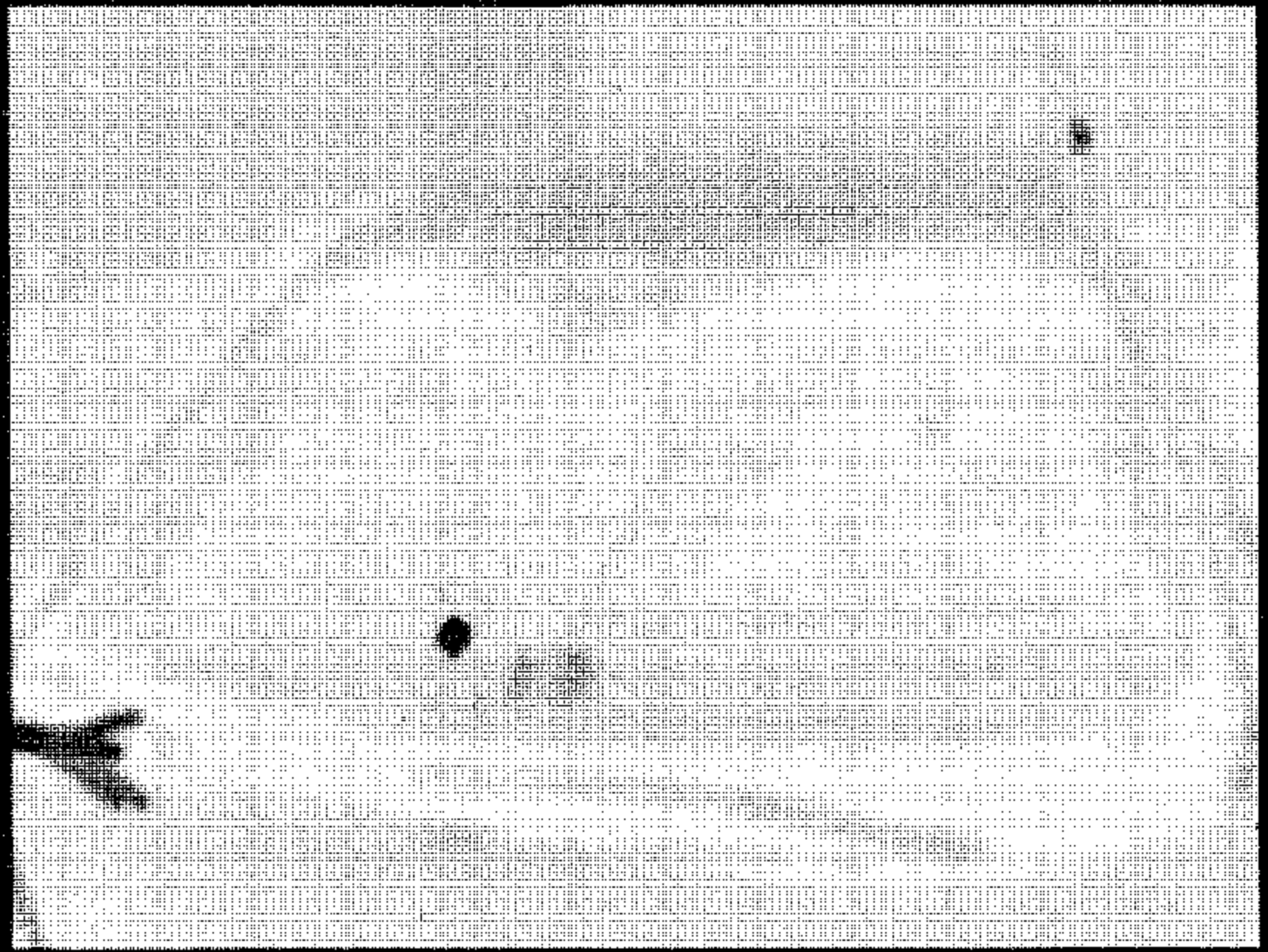
FMVSS NO. 103

FIGURE 5.13
DEFROSTED AREA AT 20 MINUTES
TEST #2



2004 LINCOLN LS
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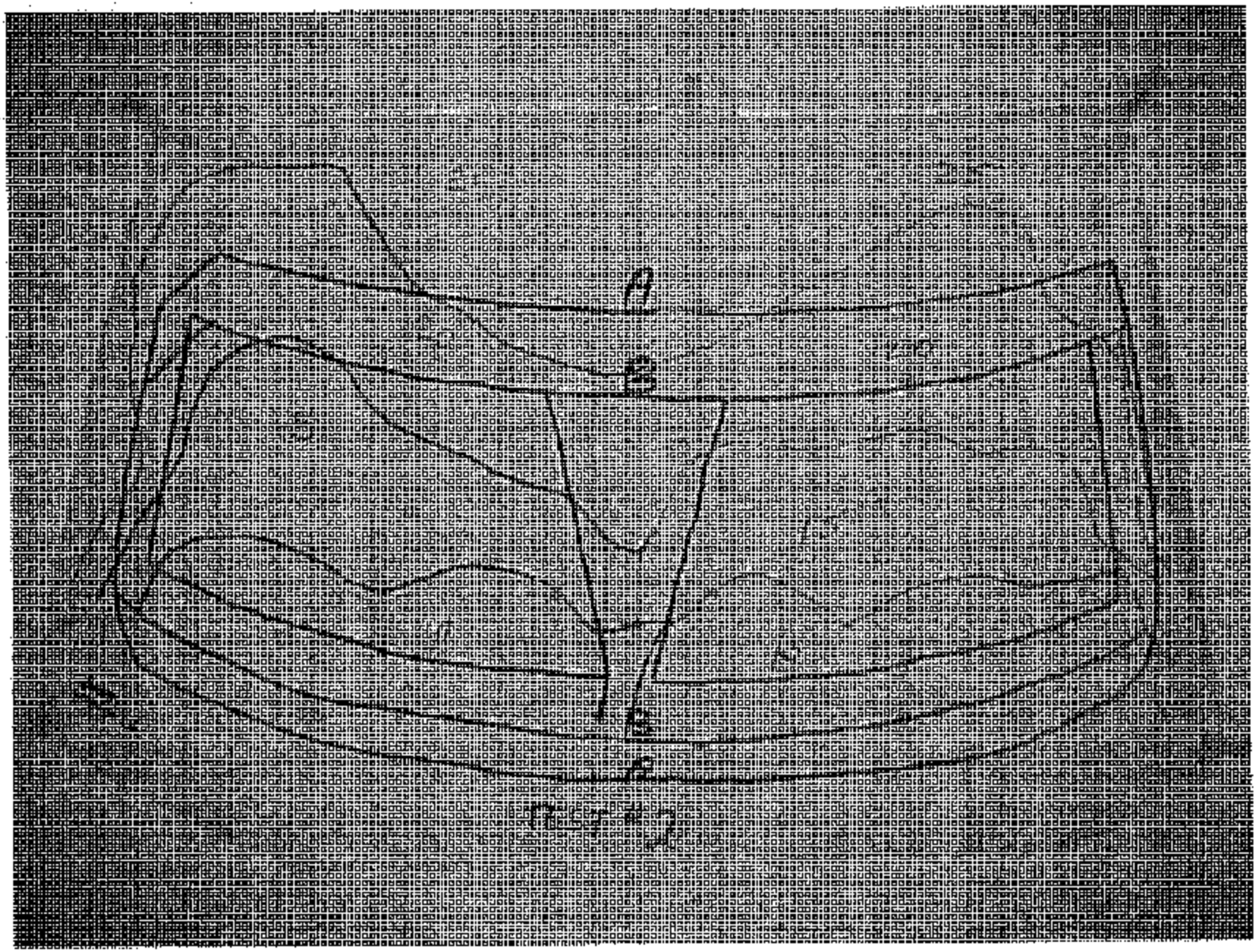
FIGURE 6.14
DEFROSTED AREA AT 25 MINUTES
TEST #2 END OF TEST



2004 LINCOLN LS
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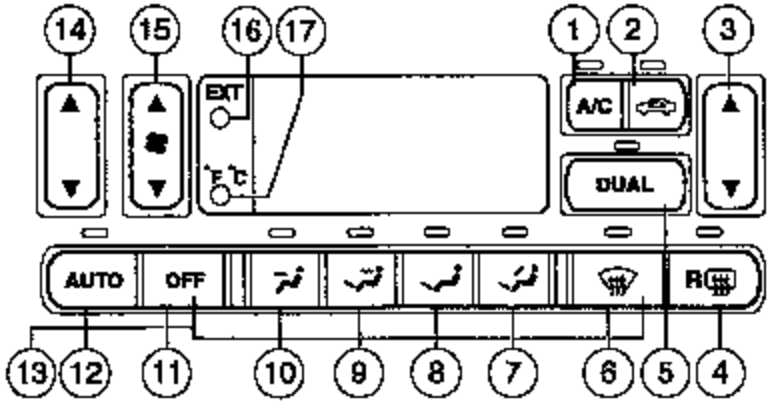
FIGURE 5.15
WINDSHIELD VELLUM PATTERN, POST TEST #2

SECTION 6

OWNER'S MANUAL DEFROSTER INSTRUCTIONS

DUAL ELECTRONIC AUTOMATIC TEMPERATURE CONTROL (DEATC) SYSTEM (IF EQUIPPED)



1. **A/C control:** Press to turn on and manually control the air conditioning. Press again to disengage. Press AUTO for the system to automatically control the temperature.

2. **Recirculation control:** Press to engage/disengage. Used to manually enable or disable recirculated air operation. When activated, recirculates air in the cabin thereby reducing the amount of time to cool down the interior of the vehicle. May also help reduce undesired odors from reaching the interior of the vehicle. Will work in all modes except defrost. Recirculation turns off automatically when floor, floor/defrost or defrost mode is selected. To reduce humidity inside the vehicle, turn recirculation off.

3. **Passenger side temperature control:** Press to engage the dual zone feature of the DEATC system. Allows the passenger to choose and control a different temperature than the driver, if desired.

4. **Rear defrost:** Press to defrost the rear window. Refer to *Rear Window Defrost* for more information.

5. **DUAL** zone selector: Press to toggle the system between single zone and dual zone control.

6. (Defrost): Distributes outside air through the windshield defroster ducts and the demister outlets. Can be used to clear ice or fog from the windshield. The system will automatically provide outside air to reduce window fogging.

7. : Distributes air through the windshield defroster ducts, demister outlets, and the front and rear seat floor ducts. The system will automatically provide outside air to reduce window fogging.

8. : Distributes air through the floor and rear seat floor ducts. The system will automatically provide outside air to reduce window fogging.

9. : Distributes air through the instrument panel, center console registers, and the front and rear seat floor ducts.

10. : Distributes air through the instrument panel and center console registers.

11. **OFF:** Outside air is shut out and the fan will not operate.

12. **Auto:** To engage automatic temperature control, press AUTO and select the desired temperature using the temperature control. The system will automatically determine fan speed, airflow location, A/C on or off, and outside or recirculated air, to heat or cool the vehicle to reach the desired temperature.

13. **Manual override controls:** Allows you to manually select where airflow is directed. To return to full automatic control, press AUTO.

14. **Driver's side temperature control:** Controls the temperature on the driver side of the vehicle in dual zone and controls the temperature of the entire vehicle in single zone.

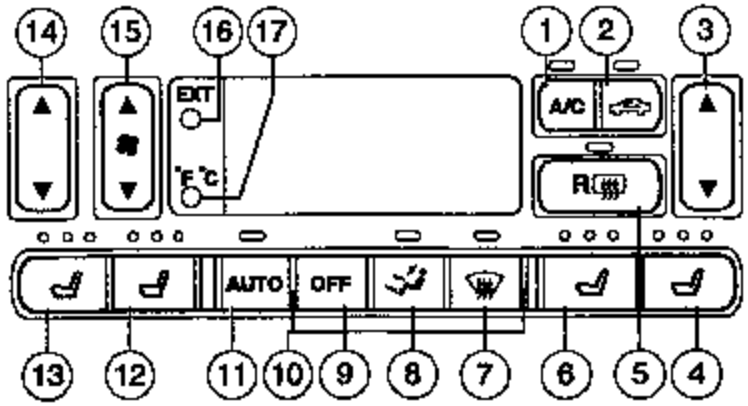
15. **Fan Speed:** Press to manually increase/decrease fan speed. In manual mode, the display will show with a bar graph to indicate fan speed. Fan speed can be manually adjusted in AUTO mode. To allow the system to automatically control fan speed, press AUTO.

16. **EXT control:** Press to display the outside air temperature. Press again to return to interior temperature. Exterior readings are most accurate when the vehicle is moving.

17. **Temperature conversion:** Press to toggle between Fahrenheit and Celsius temperature on the DEATC display only. The set point temperatures in Celsius will be displayed in half-degree increments.

Heated wiper rest: Heats the windshield wiper blades in order to reduce the chance of ice buildup and to aid in defrosting. This feature operates automatically when the outside temperature is near or below freezing.

DUAL ELECTRONIC AUTOMATIC TEMPERATURE CONTROL (DEATC) SYSTEM WITH HEATED AND COOLED SEATS (IF EQUIPPED)



1. **A/C control:** Press to turn on and manually control the air conditioning. Press again to disengage. Press AUTO for the system to automatically control the temperature.

2. **Recirculation control:** Press to engage/disengage. Used to manually enable or disable recirculated air operation. When activated, recirculates air in the cabin thereby reducing the amount of time to cool down the interior of the vehicle. May also help reduce undesired odors from reaching the interior of the vehicle. Will work in all modes except defrost. Recirculation turns off automatically when floor, floor/defrost or defrost mode is selected. To reduce humidity inside the vehicle, turn recirculation off.

3. **Passenger side temperature control:** Press to engage the dual zone feature of the DEATC system. Allows the passenger to choose and control a different temperature than the driver, if desired.

4. **Passenger heated seat:** Press to turn on the passenger side heated seat. Press once for full heat (three lights above passenger heated seat control will be illuminated). Press a second time to select medium heat (two lights). Press a third time to select low heat (one light). Press a fourth time to disengage the feature (all lights will be off).

5. (Rear defrost): Press to defrost the rear window. Refer to *Rear Window Defrost* for more information.

6. **Passenger cooled seat:** Press to turn on the passenger side cooled seat. Press once for full cool (three lights above passenger cooled seat control will be illuminated). Press a second time to select medium cool (two lights). Press a third time to select low cool (one light). Press a fourth time to disengage the feature (all lights will be off).

Automatic heated/cooled passenger seat: To engage, press the passenger side heat and cool seat controls simultaneously. The center light above the passenger side heated and cooled controls will illuminate and the display will show . This allows the seat to automatically heat or cool based on the climate control temperature selected. Press either control to disengage.

7. (Defrost): Distributes outside air through the windshield defroster ducts and the demister outlets. Can be used to clear ice or fog from the windshield. The system will automatically provide outside air to reduce window fogging.

8. **Airflow direction control:** Press to toggle through the air distribution modes listed below. The selected mode will illuminate in the display.

—Distributes air through the windshield defroster ducts, demister outlets and the front and rear seat floor ducts. The system will automatically provide outside air to reduce window fogging.

: Distributes air through the floor and rear seat floor ducts. The system will automatically provide outside air to reduce window fogging.

: Distributes air through the instrument panel, center console registers, and the front and rear seat floor ducts.

: Distributes air through the instrument panel and center console registers.

9. **Off:** Outside air is shut out and the fan will not operate.

10. **Manual override controls:** Allows you to manually select where airflow is directed. To return to full automatic control, press AUTO.

11. **Auto:** Press to engage automatic temperature control. Use the temperature control to select the desired temperature setting. The system will automatically determine fan speed, airflow location, A/C on or off, and outside or recirculated air to heat or cool the vehicle, allowing it to reach the desired temperature. Press and hold AUTO for about two seconds to toggle between single zone and dual zone temperature control.

12. **Driver heated seat:** Press to turn on the driver side heated seat. Press once for full heat (three lights above driver heated seat control will be illuminated). Press a second time to select medium heat (two lights). Press a third time to select low heat (one light). Press a fourth time to disengage the feature (all lights will be off).

13. **Driver cooled seat:** Press to turn on the driver side cooled seat. Press once for full cool (three lights above driver cooled seat control will be illuminated). Press a second time to select medium cool (two lights). Press a third time to select low cool (one light). Press a fourth time to disengage the feature (all lights will be off).

Automatic heated/cooled driver seat: To engage, press the driver side heat and cool seat controls simultaneously. The center light above the driver side heated and cooled controls will illuminate and the display will

show . This allows the seats to automatically heat or cool based on the climate control temperature selected. Press either control to disengage.

14. **Driver's side temperature control:** Controls the temperature on the driver side of the vehicle in dual zone and controls the temperature of the entire vehicle in single zone.

15. **Fan Speed:** Press to manually increase/decrease fan speed. In manual mode, the display will show with a bar graph to indicate fan speed. Fan speed can be manually adjusted in AUTO mode. To allow the system to automatically control fan speed, press AUTO.

16. **EXT control:** Press to display the outside air temperature. Press again to return to interior temperature. Exterior readings are most accurate when the vehicle is moving.

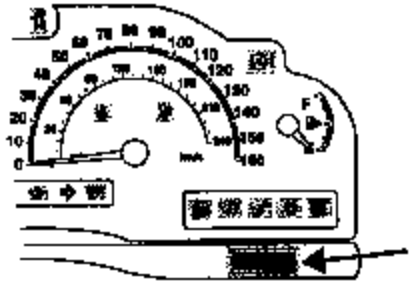
17. **Temperature conversion:** Press to toggle between Fahrenheit and Celsius temperature on the DEATC display only. The set point temperatures in Celsius will be displayed in half-degree increments.

Heated wiper rest: Heats the windshield wiper blades in order to reduce the chance of ice buildup and to aid in defrosting. This feature operates automatically when the outside temperature is near or below freezing.

OPERATING TIPS

- To reduce fog build up on the windshield during humid weather, place the air flow selector in the position.
- To reduce humidity build up inside the vehicle:
  Do not drive with the air flow selector in the OFF position.
  Do not drive with recirculation engaged.
- In order to allow the vehicle to "breathe" using the outside air inlet vents, do not leave the air flow selector in the OFF position when the vehicle is parked.
- Do not put objects under the front seats that will interfere with the airflow.

- Remove any snow, ice or leaves from the air intake area at the base of the windshield.
- With the ignition in the OFF position after operating the vehicle, some vehicle sounds related to the climate control system may be heard.
- Approximately two minutes after key off, the air distribution doors may adjust their positions as part of the normal operating process.
- Demisters, located at the far left and right sides of the dash, usually blow out a small amount of airflow in order to reduce side window fogging.
- Outboard panel registers, located at the left and right sides of the dash, blowout a small amount of airflow when in Floor, Floor/Defrost, and Defrost modes. This also reduces side window fogging.
- Do not place items over the climate temperature sensor grid. This may cause improper operation of the system.

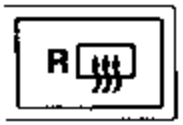


To aid in side window defogging/demisting in cold weather:

1. Select
2. Ensure that recirculation is disengaged.
3. Set the temperature control to full heat.
4. Set the highest fan speed
5. Direct the outer instrument panel vents towards the side windows.

To increase airflow to the outer instrument panel vents, close the vents located in the middle of the instrument panel.

REAR WINDOW DEFROSTER



Press the rear window defroster control to clear the rear window and sideview mirrors of thin ice or fog. The light above the control will illuminate to indicate that the rear defrost is operating.

The ignition must be in the RUN position and the engine running in order to operate the rear window defroster.

The rear window defroster turns off automatically after a predetermined amount of time, if a low battery condition is detected, or if the ignition is turned to the OFF position. To manually turn off the rear window defroster at any time, press the control again.

CABIN AIR FILTER

Your vehicle is equipped with a Cabin air filter. The particulate air filtration system is designed to reduce the concentration of airborne particles such as dust, spores and pollen in the air being supplied to the interior of the vehicle. The particulate filtration system gives the following benefits to customers:

- Improves the customer's driving comfort by reducing particle concentration
- Improves the interior compartment cleanliness
- Protects the climate control components from particle deposits

The filter is located just in front of the windshield under the cowl grille on the passenger side of the vehicle.

For more information, or to replace the filter, see your Ford, Lincoln or Mercury Dealer.