Unified
Investigations & Sciences, Inc.

3955 Whitebrook Drive, Suite 101
Memphis, Tennessee 38118
901-375-4062
Fax 901-375-4295

PRIVILEGED AND CONFIDENTIAL
REPORT NUMBER-ONE & FINAL

October 4, 2004

PREPARED FOR:	Nationwide Insurance Company P.O. Box 2997 Cordova, TN 38088
ATTENTION:	Mr. Don Patterson

INSURED:	[redacted]
DATE OF LOSS:	August 3, 2004
LOSS LOCATION:	Memphis, TN
POLICY NUMBER:	
CLAIM NUMBER:	[redacted]
UIS FILE NUMBER:	TN01-04315

[redacted]

ASSIGNMENT

Assignment received September 8, 2004, to conduct a vehicle fire examination of a 1998 Ford Explorer bearing a vehicle identification number of 1FMZU34E5WU[redacted]AND a Tennessee license plate of[redacted] The vehicle examination was conducted at Southern Auto Salvage Pool at 3940 Jackson Avenue on September 13.

PRELIMINARY FINDINGS

Examination revealed the vehicle had suffered a hostile fire on the interior of the engine compartment in the vicinity of the brake master cylinder. Burn and oxidation patterns established a point of origin at the brake pressure switch situated at the front of the master cylinder. The brake pressure switch suffered heavy destruction and consumption of the polymer materials, with melting of the aluminum section of the switch. The brake pressure switch's electrical connector extending from the cruise control had the aluminum remains of the brake pressure switch melted to the stranded conductor. A section of the ring like aluminum section of the brake pressure switch make-up was identifiable.

The brake pressure switch worked in conjunction with the cruise control and when the brake is depressed, the switch is activated allowing current flow. When the brake pedal is released, the brake pressure switch deactivates. Although the exact anomaly initiating the malfunction within the switch could not be determined, the most probable explanation for the event was due to a damaged or weak seal between the switch and the brake switch body, which allowed moisture or brake fluid to enter the switch and create activation of the switch that eventually overheated, resulting in ignition.

Fire spread from the point of origin involving the plastic brake fluid reservoir, which ignited the flammable brake fluid that added to the overall development and spread. Involvement of various plastic component parts and rubber hoses also added to the spread of fire. Fire dropping down into the area of the fuel lines compromised the fuel lines that involved gasoline. Fire burned a hole through the left bank valve cover, which aligned with the origin area.

INVESTIGATION

[redacted] said that the vehicle was parked in a parking garage a[redacted] when the fire occurred. He had not had any problem with the vehicle and did not know what started the fire, but that the vehicle had been parked for some time.

[redacted]

COMMENTS

A verbal report was given to you on September 13, 2004. The scope of the requested vehicle fire examination is complete. As instructed, the file will be closed. If follow-up is needed, the file can easily be reactivated.

EXHIBITS

1) Property Description Sheet

2) Fire Report

3) Eight Mounted Color Photographs with Explanation Sheet

4) Extra Photographs

5) Negatives (Sent Separately)

Gerald Alsup, CFI
Senior Investigator
901-375-4062

GA/cj
Enclosures

PHOTOGRAPH EXPLANATION

1) View of the vehicle identification number: 1FMZU34E5WU[redacted]

2) View of the rear of the vehicle

3) View of the left side of the vehicle

4) View of the front of the vehicle

5) View of the engine compartment, the red arrow depicts the origin area

6) Close up view of the origin area in front of the power brake booster tank

7) View of the remains of the brake pressure switch

8) View of the origin are and the burn through of the left bank valve cover as depicted by the red arrow

Exhibit 1

Property Description
(Equipment or Vehicle)

Insured [redacted] UIS No. TN01-04315

Street [redacted] City Memphis State TN

Type: X Vehicle ☐ Heavy Equipment Other

Yr./Make 1998 Ford Model: Explorer VIN #: 1FMZU34E5WU[redacted]

Location of Examination: Southern Auto Salvage Pool-3940 Jackson Ave., Memphis, TN

Location of Loss: 516 Tennessee, Memphis, TN

Fire Protection: X Paid ☐ Paid & Volunteer ☐ Unknown ☐ Volunteer

Department Memphis Fire Department Distance to Station

Completed during examination ☐ Diagram ☐ Video X Photographs ☐ Measurements

Date examination began 9-13-04 Date examination completed 9-13-04

EXHIBIT 2

INCIDENT REPORT

NFIRS 1

FILL IN THIS REPORT IN YOUR OWN WORDS

MEMPHIS FIRE DEPARTMENT

COMPLETE FOR ALL INCIDENTS

A | FDID: 79555 | INCIDENT NO: 18141312 | STATE: TN | DEPT: 018 | DIST: 013 | YEAR: 04 | DAY OF WEEK: Tue | ALARM: 13/18/12 | ARRIVAL: 13/18/15 | TIME: 11:45:10

B | TYPE OF STRUCTURE FIRE: Vehicle Fire 113 | TYPE OF ACTION TAKEN: Extinguishment 11 | MUTUAL AID: 10 RECD 10 GIVEN

C | FIXED PROPERTY USE: Private Parking Garage 419 | HEAT SOURCE: unknown 010

D | CORRECT ADDRESS: [redacted] | ZIP CODE: 38111 | CENSUS TRACT: 013

E | OCCUPANT NAME: unknown | TELEPHONE: [redacted] | HOUSE NO.

F | OWNER NAME: Parker, Natalie | ADDRESS: [redacted]

G | METHOD OF ALARM TO FIRE DEPT: 911 7 | DISTRICT: 12011 | SUB: 18 | NO. ALARMS: 1

H | NUMBER FIRE SERVICE PERSONNEL RESPONDED: 12 | NUMBER VEHICLES RESPONDED: 13 | NUMBER APPARATUS RESPONDED: 12 | NUMBER OF OTHER VEHICLES RESPONDED: 11

COMPLETE IF CASUALTY

I | NUMBER OF INJURIES: FIRE SERVICE 10 OTHER 10 | NUMBER OF FATALITIES: FIRE SERVICE 10 OTHER 11

COMPLETE FOR ALL FIRES

J | COMPLEX: NO complex 198 | MOBILE PROPERTY TYPE: Automobile 111

K | AREA OF FIRE ORIGIN: Engine Area 113 | EQUIPMENT INVOLVED IN IGNITION: No Equipment involved 118

L | FORM OF HEAT OF IGNITION: Arc from faulty contact 112 | TYPE OF MATERIAL IGNITED: Type of Material unknown 000 | FORM OF MATERIAL IGNITED: Electrical wire 161

M | METHOD OF EXTINGUISHMENT: Personnel 5 | LEVEL OF FIRE ORIGIN: Ground Level 01 | ESTIMATED LOSS (DOLLARS ONLY): 17000

N | NUMBER OF STORIES | CONSTRUCTION TYPE

O | EXTENT OF FLAME DAMAGE | EXTENT OF SMOKE DAMAGE

P | DETECTOR PERFORMANCE | SPRINKLER PERFORMANCE

Q | IF SAMPLE OBTAINED BEFORE ROOM OF ORIGIN | TYPE OF MATERIAL CARRYING HOSE SAMPLE | NUMBER OF SAMPLE TAKEN

R | FORM OF MATERIAL SAMPLED FOR LAB ANALYSIS

S | V MOBILE PROPERTY: YEAR 1998 | MAKE: Explorer | MODEL: FORD | VEHICLE NO./VIN: 1FMZU34W4WUB46152 | LICENSE NO.: DFH-606

T | IF EQUIPMENT INVOLVED IN IGNITION | YEAR | MAKE | MODEL | SERIAL NO.

MEMPHIS FIRE DEPT. ☐ CHECK IF COMMENTS ON REVERSE SIDE

TRUE COPY

INITIAL

DATE 8-25-04

OFFICER OF ENGINE (NAME, RANK, ASSIGNMENT): Lt. Anthony Hood | DATE: 8/3/04

OFFICER IN CHARGE (NAME, RANK, ASSIGNMENT): T. B. Jacobs B/C B-1-B | DATE: 8/3/04

EMS-009-LC1-4301

EXHIBIT 3

Unified Investigations & Sciences, Inc.

Insured : [redacted] **UIS File # :** TN01-04315

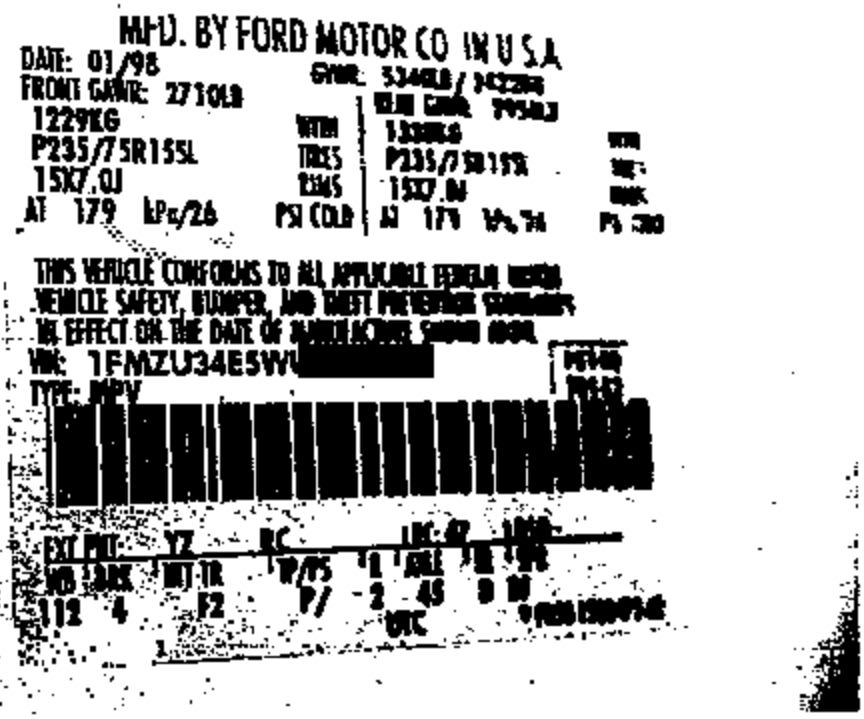


Photo # 1

Photo # 2

Unified Investigations & Sciences, Inc.

Insured : [redacted] **UIS File # :** TN01-04315

Photo # 3

Photo # 4

Ins 04315

Photo # 5

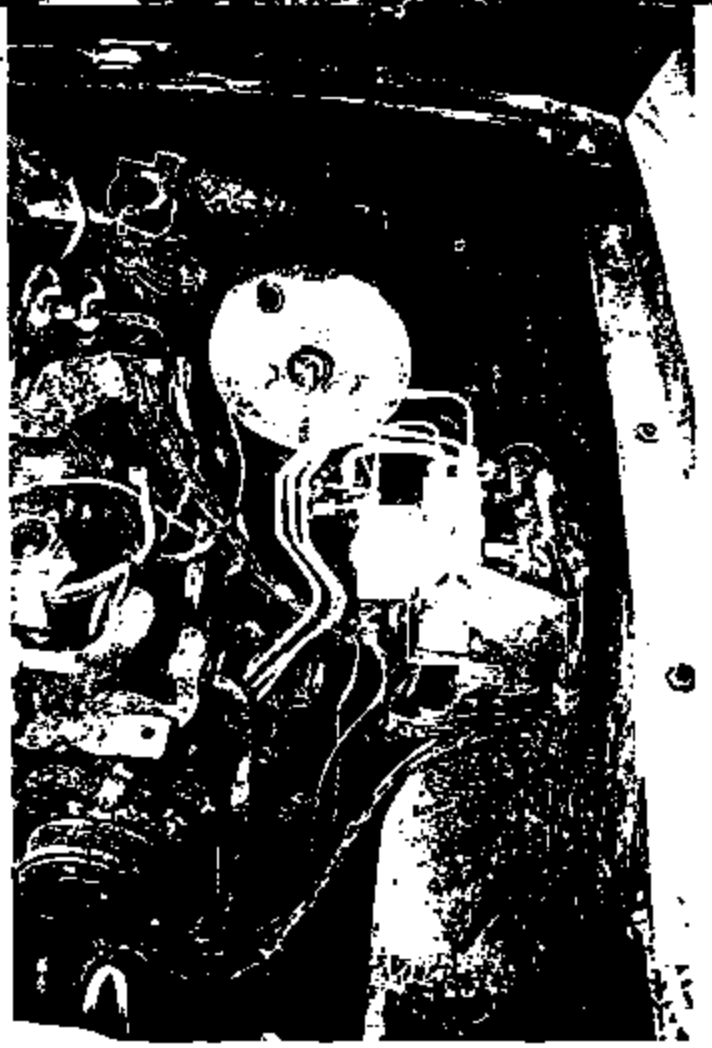


Photo # 6

Unified Investigations & Sciences, Inc.

Insured : [redacted] UIS File # : TN01-04315

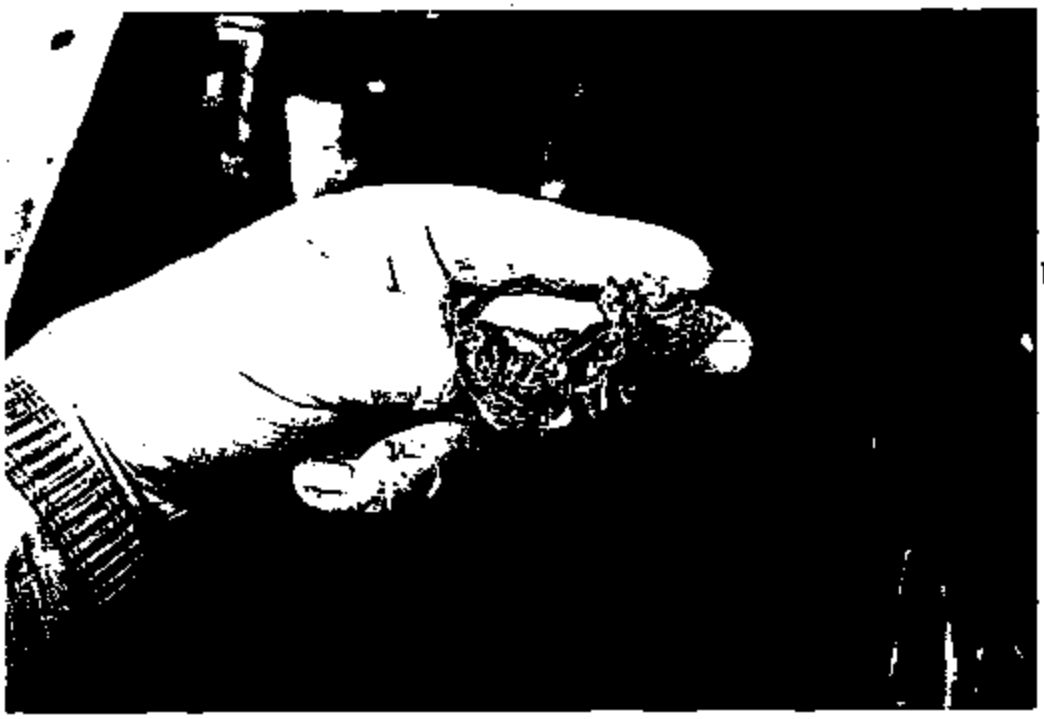


Photo # 7

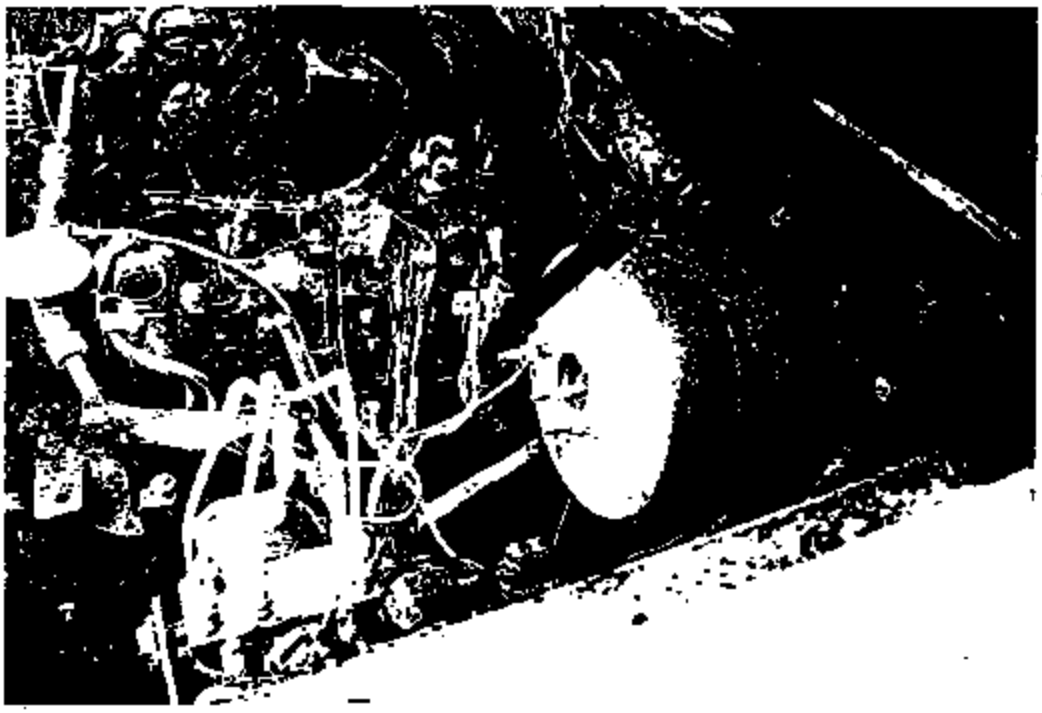


Photo # 8

Office of the General Counsel

PRIVILEGED & CONFIDENTIAL

Ford Motor Company
Parklane Towers West
Suite 300
Three Parklane Boulevard
Dearborn, Michigan 48126-2568

September 29, 2004

Nationwide Insurance
8221 Macon Rd.
Cordova, TN 38088-2997
ATTENTION: DON PATTERSON

RE: Claimant: [redacted]
Your Claim #:
DOL: 06-03-2004

Dear Mr. Patterson:

We acknowledge your recently submitted subrogation claim. In order to assist us in evaluating your claim, we request that you provide us with the following information: (Please note that the information requested is in regard to the Ford manufactured vehicle.)

- ☒ 1. Attach statement with a complete description of the incident, including events that occurred prior to and subsequent to the loss.
- ☒ 2. A copy of the police and/or fire report.
- ☒ 3. Original color photographs of the vehicle's collision/fire damage & the alleged defective parts, from several different angles.
- ☐ 4. Original color photographs of the inside of the vehicle showing the steering wheel, dash and roof areas.
- ☐ 5. Original color photographs of the accident / fire scene from several different angles.
- ☒ 6. Attach a copy of your expert's report and the expert's original photographs.
- ☒ 7. Attach the repair estimate, repair order, or your total loss worksheet for the vehicle's damage and any losses associated with this incident, and copies of draft payments.
- ☒ 8. Attach the complete service history for the subject vehicle, including any tune-ups or oil changes.

Please answer the following in the space provided. If you need additional space, please use the back of the form;

9. What was the city and state of occurrence: NA Memphis, TN
10. The 17 digit vehicle identification number: 1FMZU34E5WU[redacted]
11. What was the mileage at time of occurrence: NA
12. What is the alleged defect:
brake light electrical switch on master cylinder

13. Has the alleged defective part been repaired or replaced? (circle one) Yes or (No)

14. What is the current location of the vehicle, and the alleged defective part(s)?
Southern Auto Salvage

15. List all after market additions or modifications that were made to the vehicle:

16. Was the engine running? (circle one) Yes or (No)

17. Were the keys in the ignition? (circle one) Yes or (No)

18. Was this vehicle purchased new or used: _____

If purchased used, provide the date of purchase, mileage at the time of purchase, and from whom the vehicle was purchased: _____

Once we are in receipt of the requested information, it will be reviewed and you will be notified of our decision concerning your claim. Should you not send all of the requested information and materials, we will assume that you are not interested in pursuing a claim and we will close our file. Please note that your vehicle will not be inspected until all the above information has been submitted and a determination has been made as to whether an inspection is warranted.

Please be advised that all necessary steps should be taken to ensure that the subject vehicle and all of its component parts are maintained and preserved for trial. Ford Motor Company has the right to inspect the vehicle and remove and test any component part that you claim to be defective, and to be presented with the vehicle and the subject component part(s) at the time of trial, should litigation ensue from this informal claim.

Please Note: If you propose to repair the vehicle for continued usage, such repairs may not be performed until after Ford Motor Company has inspected the vehicle and removed and tested any component part you claim to be defective or advised you in writing that it does not intend to perform such inspection and/or testing at this time. But even in that event, Ford Motor Company will insist that all components claimed to be defective are maintained and preserved for trial.

Sincerely,

Shawn L. Norton
Claims Analyst /
Litigation Assistant

NATIONWIDE INSURANCE

September 16, 2004

Ford Motor Company
Attn: General Counsel
Park Lane Towers West, Suite 300
3 Park Lane Blvd
Dearborn, MI 48126-2568

RE: Nationwide Insurance Claim [redacted]

To Whom It May Concern:

On 8/03/2004 at about 1:30 PM [redacted] parked his 1998 Ford Explorer, VIN 1FMZU34E5WU[redacted] in the private parking garage at [redacted] in Memphis. The fire started in the engine compartment around 3:30 PM, totaling the Explorer and damaged a 1997 Honda Accord that was parked beside it.

Preliminary observations indicate that the vehicle engine compartment is the origin of the fire. Therefore, a Cause and Origin Investigation has been scheduled for 10:00 AM, Monday October 4th, 2004, at South Salvage Storage lot stock #95992, located at 3940 Jacksin Avenue in Memphis Tennessee.

Please advise if you wish to participate in this examination. You can contact me at the below listed telephone number or my cellular telephone number, 901-277-3280.

Sincerely,

Don Patterson
Special Investigative Unit

8221 MACON RD • CORDOVA, TN • 38088-2997
PHONE: 901-309-4518 • FAX: 901-752-1576

EN05-005-LC1-4388

Allstate Insurance Company
1500 City West Suite 800
Houston, TX 77042

Phone Number: 713-435-2600
Office Hours: Monday-Friday 8:00-4:30

March 1, 2004

Ford Motor Company – General Counsel's Office
3 Parklane Blvd, Ste PTW300
Dearborn, MI 48126
Attn: Shawn Norton

RE: Our Claim Number: [redacted]
Our Insured:
Date of Loss: 02/25/2004
Loss Locate: [redacted], New Braunfels TX [redacted]
Amount of loss: undetermined, Policy deductible: $500.00

Dear Ms. Norton:

Please accept this letter as notice to your company of a claim for subrogation. Our policyholder sustained fire damage to her home that has been linked to a fire in the left rear of the engine compartment on the driver's side of the 1998 Ford Explorer.

[redacted] owns the vehicle involved which has a Vin. of 1FMZU34E8W[redacted]
Allstate also is handling the vehicle loss and that claim number i[redacted]
[redacted] is handling this claim.

Currently, the vehicle is located at our insured's home and he can be reached at, (210)559-5705. Our file is assigned to Eli Garcia and his phone number is, 1-956-279-4688, please contact Eli for any concerns you may have.

We also ask you get in touch with Mr. John Ragone of National Loss Consultants to schedule an appointment to inspect this vehicle. John's Phone number is , 281-489-3445 and his e-mail address is , John.Ragone@nationallossconsultants.com.

Sincerely,

Pat McGrath-Jones
Senior Staff Claim Service Adjuster, Subrogation
Allstate Property-Casualty Claim Service Organization
713-435-2754

CONFIDENTIAL FIRE REPORT

PREPARED FOR: MR. ELI GARCIA
ALLSTATE INSURANCE
2112 W. UNIVERSITY DRIVE, SUITE 708
EDINBURG, TEXAS 78539

FROM: FIRE LOSS ANALYSIS INC.
2902 N.W. LOOP 410
SAN ANTONIO, TEXAS 78230
OFFICE: (210) 344-2781
FAX: (210) 344 – 1705

REPORT DATE: MARCH 12, 2004

REFERENCE: [redacted]
NEW BRAUNFELS, TEXAS [redacted]

DATE OF LOSS: FEBRUARY 25, 2004

CLAIM NUMBER: [redacted]

FLA NUMBER: A02-004-4833

CONTENTS

01.0 ASSIGNMENT DATA

01.01 DATE: February 26, 2004.

01.02 DAY OF WEEK: Thursday.

01.03 REQUESTED BY: Ms. Christi Norfleet.

01.04 RECEIVED BY: Mr. Edward S. Sanchez.

01.05 TYPE OF ENGAGEMENT: Origin and Cause.

01.06 SPECIAL INSTRUCTIONS: None.

01.07 CONTACT PERSON: The homeowner, [redacted]

01.08 TYPE OF POLICY: H.O.B.

01.09 FIRE AUTHORITY: New Braunfels Fire Department.

01.10 ENTRY CONSENT: Verbal consent to enter was given by the homeowner, [redacted] Coon.

02.0 SCENE ORIENTATION

02.01 ARRIVAL DATE: February 27, 2004.

02.02 ARRIVAL TIME: 10:00 a.m.

02.03 ARRIVAL DAY OF WEEK: Friday.

02.04 WEATHER DURING INVESTIGATION: Clear.

02.05 SCENE ALTERATION: There had been minor scene alterations prior to our arrival for this examination. The Ford Explorer (Eddie Bauar) TXL G99-MBC, had been pulled out of the garage and was sitting on the driveway.

02.06 STAFF: Mr. Edward S. Sanchez & Mr. Felix Sanchez.

02.07 OTHERS AT SCENE [redacted] personnel with Steamatic Company were present during this examination.

02.08 REMARKS: The fire was concentrated in the engine compartment of the Ford Explorer.

03.0 DESCRIPTION OF LOSS

03.01 TYPE OF STRUCTURE: The structure was a single story, wood frame, with a brick exterior finish, single family dwelling. It was constructed on a concrete slab type foundation and covered with a composition shingle type roof.

03.02 COMPASS DIRECTION OF STRUCTURE: The structure faces approximately 175° south.

03.03 NUMBER OF ROOMS IN STRUCTURE: The house was subdivided into twelve rooms.

03.05 INSULATION: There was fiberglass insulation covering the walls and ceilings of this structure.

03.06 ATTIC ACCESS: The attic access is located on the garage ceiling.

04.0 UTILITIES

04.01 ELECTRICITY

04.01.01 ELECTRICITY PROVIDER: New Braunfels Utilities.

04.01.02 ELECTRIC METER BRAND AND SERIAL NUMBER: Schlumberger, Serial # 16251125.

04.01.03 ELECTRIC METER READING: 5-2-1-2-9.

04.01.04 ELECTRIC METER LOCATION: The electric meter is located next to the exterior wall of the garage.

04.01.05 SERVICE TYPE: Lateral service entry from the north with copper branch wiring.

04.01.06 OVERCURRENT PROTECTION: Exterior breaker panel on the west wall next to the meter.

04.01.07 DISPLAY OF PANEL:

	Ampere	Type	Position		Ampere	Type	Position
Exterior							
1.	100	double	on	3.	50/50	double	on
2.	30	single	on	4.	50/50	double	on
				5.	50/50	double	on
Interior - North wall of the garage							
1.	20	single	on	13.	20	single	on
2.	20	single	on	14.	20	single	on
3.	20	single	on	15.	20	single	on
4.	20	single	on	16.	20	single	on
5.	20	single	on	17.	20	single	on
6.	20	single	on	18.	20	single	on
7.	20	single	on	19.	20	single	on
8.	20	single	on	20.	20	single	on
9.	20	single	on	21.	20	single	on
10.	20	single	on	22.	20	single	on
11.	20	single	on	23.	20	single	on
12.	20	single	on	24.	20	single	on

04.02 GAS SERVICE

04.02.01 GAS PROVIDER: Extex.

04.02.02 GAS TYPE: Natural gas.

04.02.03 GAS METER BRAND AND SERIAL NUMBER: American, Serial # 37999-0000-3898.

04.02.04 GAS METER READING: 1-4-0-7.

04.02.05 GAS METER LOCATION: The gas meter is located on the exterior west wall of the garage.

04.03 SECURITY SYSTEM

04.03.01 SECURITY SYSTEM PROVIDER: Brinks Security.

04.03.02 CONTROL BOX PLACEMENT: The control box is located on the north wall of the master bedroom closet.

04.03.03 ENGAGED AT TIME OF LOSS: Yes.

04.04 DETECTORS:

04.04.01 TYPE OF DETECTORS: Smoke.

04.04.04 DETECTOR POWER: The units were hardwired to the electrical system.

04.05 HEAT, VENTILATION, AIR CONDITIONING, (HVAC)

04.05.01 HVAC BRAND NAME: Goodman Manufacturing.

04.05.02 HVAC RETURN AIR PLACEMENT: The return air duct is located on the bedroom hall ceiling.

04.05.03 LOCATION OF UNIT: The unit is located in the attic.

04.05.04 THERMOSTAT PLACEMENT: The thermostat is located on the hall wall.

04.05.05 THERMOSTAT SETTING: Auto - Off - 70°.

04.05.06 OTHER HEATING OR COOLING DEVICES: None noted.

04.06 WATER HEATER

04.06.01 WATER HEATER BRAND NAME: Rheem.

04.06.02 WATER HEATER TYPE: A natural gas operated water heater with a forty-gallon capacity.

04.06.03 WATER HEATER GAS VALVE POSITION: On.

04.06.04 WATER HEATER LOCATION: The water heater is located along the north wall of the garage.

05.0 EVIDENCE

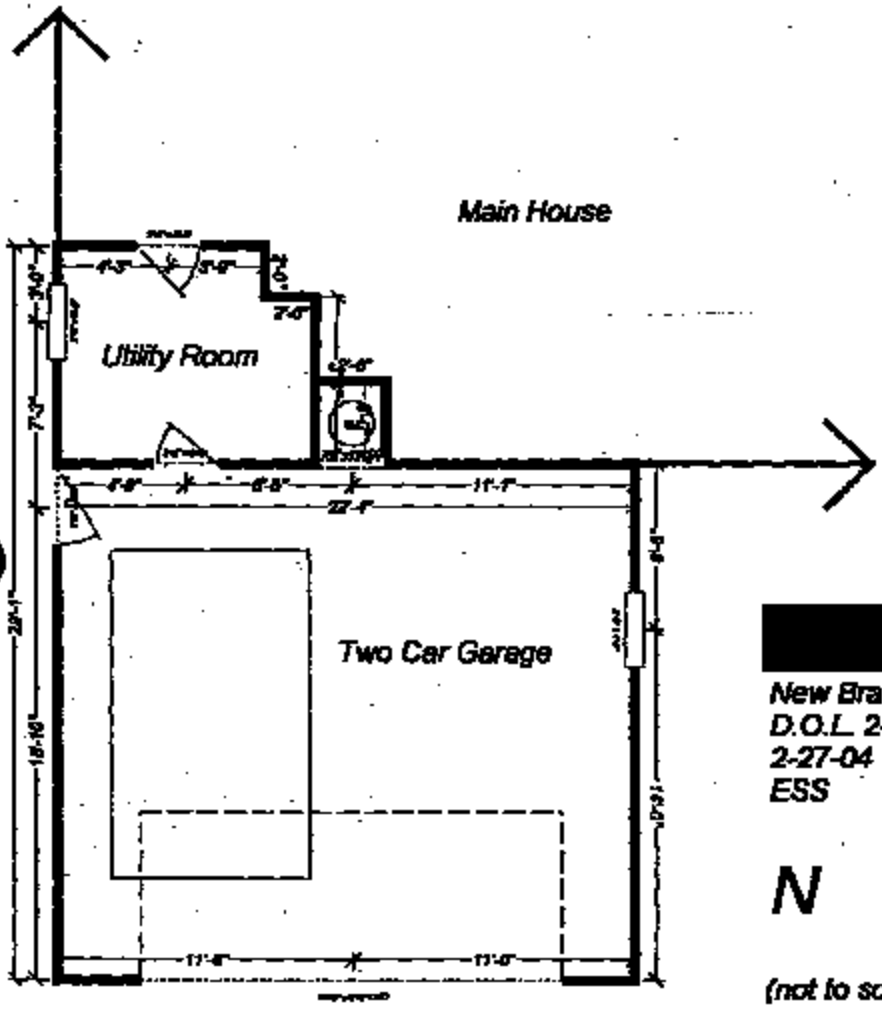
05.01 DATE SECURED: N/A.

05.02 EVIDENCE SECURED – DESCRIPTION, AND LOCATION

No evidence was secured during this examination.

06.0 FLOOR PLAN/SKETCH

THIS FLOOR PLAN IS NOT DONE TO SCALE



[redacted]
New Braunfels, Tx [redacted]
D.O.L. 2-25-04
2-27-04
ESS

N

(not to scale)

ER05-005-LC1-4419

07.0 INTERVIEW

February 27, 2004 Investigator: Mr. Edward S. Sanchez

DETAILS:

[redacted] and his wife were interviewed regarding the fire and they stated that they were getting ready to retire for the evening when the Bricks Security Alarm was activated in the garage area. [redacted] immediately investigated finding no fire or smoke within the house. He then opened the door leading into the garage and immediately identified fire venting from the left side of the engine compartment of the Ford Explorer and immediately sounded the fire alarm. However, the alarm system was e quipped with fire detection capabilities and the alarm company had already notified the fire department.

[redacted] then escorted his family out to the front yard and the fire department arrived shortly thereafter. The fire was then extinguished and the vehicle was pulled onto the driveway from the interior of the garage.

08.0 WEATHER

WEATHER OBSERVATIONS AT THE TIME OF LOSS ARE BASED ON THE SOUTHERN REGIONAL CLIMATE CENTER, DEPARTMENT OF GEOGRAPHY AND ANTHROPOLOGY; LOUISIANA STATE UNIVERSITY, BATON ROUGE, LOUISIANA, (225) 578-5021.

Station: KHSV HUNTSVILLE INTL AP
NCDC Preliminary Surface Airways (SA) Observations

	(Date/Time) YY MM DD HH --- CST ---	Tem F	Td F	RH %	-- WIND -- Dir deg	Spd kt	Gst kt	SLP mb	Vis mi	Accum Prcp in	6 Hour Max F	6 Hour Min F	Obs Time (UTC)
SA	04 2 25 1	50	46	89	300	14	.	1009.0	10.0	0.00			06:51
	WX:				CLOUDS: BKN020 BKN100								
	REMARKS: AO2												
SA	04 2 25 2	49	43	86	310	13	.	1009.2	10.0	0.00			07:51
	WX:				CLOUDS: OVC020								
	REMARKS: AO2												
SA	04 2 25 3	48	41	77	320	16	.	1009.5	10.0	0.00			08:51
	WX:				CLOUDS: OVC020								
	REMARKS: AO2												
SA	04 2 25 4	47	40	77	310	18	24	1009.1	10.0	0.00			09:51
	WX:				CLOUDS: OVC020								
	REMARKS: AO2												
SA	04 2 25 5	45	38	77	310	15	.	1009.2	10.0	0.00			10:51
	WX:				CLOUDS: SCT020 BKN037								
	REMARKS: AO2 PK WND 32026/1006												
SA	04 2 25 6	44	38	80	310	17	23	1010.6	10.0	0.00	51	44	11:51
	WX:				CLOUDS: OVC022								
	REMARKS: AO2												
SA	04 2 25 7	43	37	79	320	18	25	1011.3	10.0	0.00			12:51
	WX:				CLOUDS: OVC020								
	REMARKS: AO2												
SA	04 2 25 8	43	37	79	320	20	23	1012.2	10.0	0.00			13:51
	WX:				CLOUDS: OVC020								
	REMARKS: AO2												
SA	04 2 25 9	44	36	74	320	17	22	1013.5	10.0	0.00			14:51
	WX:				CLOUDS: OVC020								
	REMARKS: AO2												
SA	04 2 25 10	44	37	77	320	16	24	1014.2	10.0	0.00			15:51
	WX:				CLOUDS: OVC020								
	REMARKS: AO2 PK WND 32027/1507												
SA	04 2 25 11	44	37	77	320	15	.	1015.0	10.0	0.00			16:51
	WX:				CLOUDS: OVC020								
	REMARKS: AO2												
SA	04 2 25 12	45	36	71	340	14	23	1015.8	10.0	0.00	45	43	17:51
	WX:				CLOUDS: OVC022								
	REMARKS: AO2 PK WND 35027/1730												
SA	04 2 25 13	45	36	71	330	16	23	1015.6	10.0	0.00			18:51
	WX:				CLOUDS: OVC022								
	REMARKS: AO2												
SA	04 2 25 14	44	36	74	330	20	.	1015.7	10.0	0.00			19:51
	WX:				CLOUDS: OVC022								
	REMARKS: AO2 PK WND 34026/1937												
SA	04 2 25 15	44	36	74	320	19	24	1016.4	10.0	0.00			20:51
	WX:				CLOUDS: OVC022								
	REMARKS: AO2												
SA	04 2 25 16	44	36	74	320	17	24	1016.9	10.0	0.00			21:51
	WX:				CLOUDS: OVC022								
	REMARKS: AO2												
SA	04 2 25 17	44	35	71	330	16	.	1017.4	9.0	0.00			22:51
	WX:				CLOUDS: OVC024								
	REMARKS: AO2												
SA	04 2 25 18	46	35	66	330	13	.	1017.8	10.0	0.00	46	44	23:51
	WX:				CLOUDS: SCT030 BKN060								
	REMARKS: AO2												
SA	04 2 25 19	45	34	65	340	14	.	1018.7	10.0	0.00			00:51
	WX:				CLOUDS: BKN035								
	REMARKS: AO2												
SA	04 2 25 20	43	34	71	330	9	.	1019.6	10.0	0.00			01:51
	WX:				CLOUDS: BKN031								
	REMARKS: AO2												
SA	04 2 25 21	42	33	71	340	16	24	1019.8	10.0	0.00			02:51
	WX:				CLOUDS: FEW027								
	REMARKS: AO2												
SA	04 2 25 22	41	33	73	340	12	.	1020.8	10.0	0.00			03:51
	WX:				CLOUDS: FEW035								
	REMARKS: AO2												
SA	04 2 25 23	41	33	73	340	15	.	1021.4	10.0	0.00			04:51
	WX:				CLOUDS: BKN027								
	REMARKS: AO2												
SA	04 2 25 24	39	32	76	320	12	.	1021.4	10.0	0.00	46	39	05:51
	WX:				CLOUDS: CLR								
	REMARKS: AO2												

09.0 ORIGIN AND CAUSE

This investigation was performed utilizing the scientific method to establish an origin and cause determination in accordance with guidelines and standards as set forth by the following:

National Fire Codes (NFC) / National Fire Protection Association (NFPA)

a) NFPA 901 *Standard for Incident Reporting and Fire Protection* (2001 edition)
b) NFPA 921 *Guide for Fire and Explosion Investigations* (2001 edition)
c) NFPA 1033 *Standard for Professional Qualifications for Fire Investigator* (1998 edition)

American Society of Testing Materials (ASTM) Standards

a) E1188-95 *Collection and Preservation of Information and Physical Items by a Technical Investigator*
b) E1459-92 (re-approved 1998) *Standard Guide for Physical Evidence Labeling and Related Documentation*

09.01 It is my opinion this fire was accidental in nature. It resulted from a failure in the left rear section of the engine compartment of the family Ford Explorer which was parked in the west stall of the garage.

09.02 An exterior examination of the risk was then performed in an effort to identify all independent areas of fire involvement, points of forced entry to the structure as well as all abnormal fire ventilation patterns through the exterior walls and/or roof. The examination immediately identified a Ford Explorer parked on the driveway directly outside of the garage. The vehicle displayed direct fire damage in the engine compartment with very well defined burn patterns to the hood area. The most intense fire was isolated to the left rear section of the compartment (figure 1). The fire had also breached the bulkhead (firewall) allowing for direct fire impingement on combustible and non-combustible materials within the dashboard (figure 2). This damage was isolated to the left half of the dashboard area with minimal damage to the remainder of the interior of the vehicle.

09.03 The examination of the structure failed to identify any direct fire activity especially in the garage where secondary smoke damage to the ceiling and upper elevations of the enclosure were confirmed (figure 3).

09.04 I then questioned [redacted] regarding the vehicle and they stated that they had not had any recent repairs performed on the unit and that it had been parked in the garage for several hours prior to the fire. They informed me that the vehicle was also insured by Allstate Insurance Company and provided me with the name of the adjuster handling the vehicle claim. Contact was made with Ms. Selena Robinson and she was briefed on our

findings. Shortly after Ms. Pat Jones of Allstate Insurance contacted us at the scene and informed us that National Fire Consultants had been retained to perform the origin and cause determination of the fire within the vehicle. The vehicle was then covered with a tarp including the undercarriage in order to preserve the vehicle and any components that might separate from the vehicle during the towing of the unit.

09.05 Since we were instructed to leave the vehicle alone for the National Fire Consultants the cause of the fire is listed as "Undetermined". However, the most probable is the failure of an electrical component which was energized while the vehicle was parked in the garage.

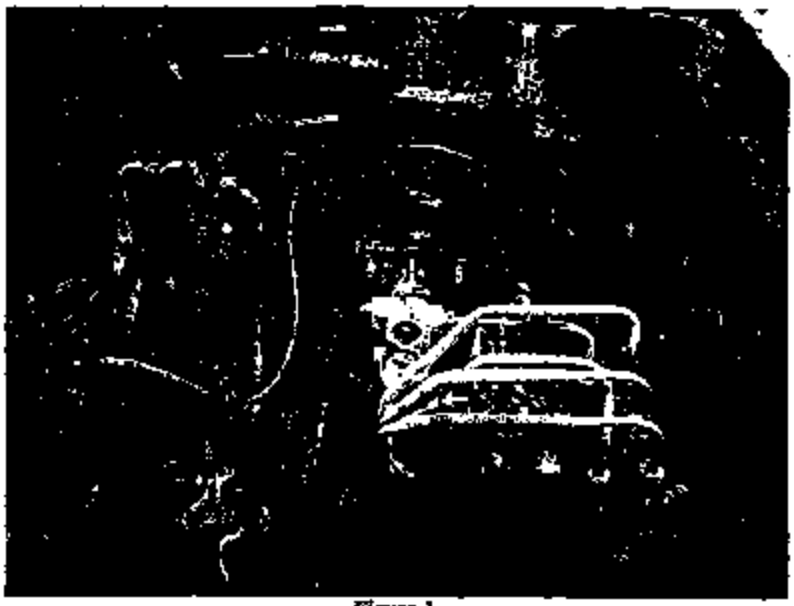


Figure 1

Figure 2

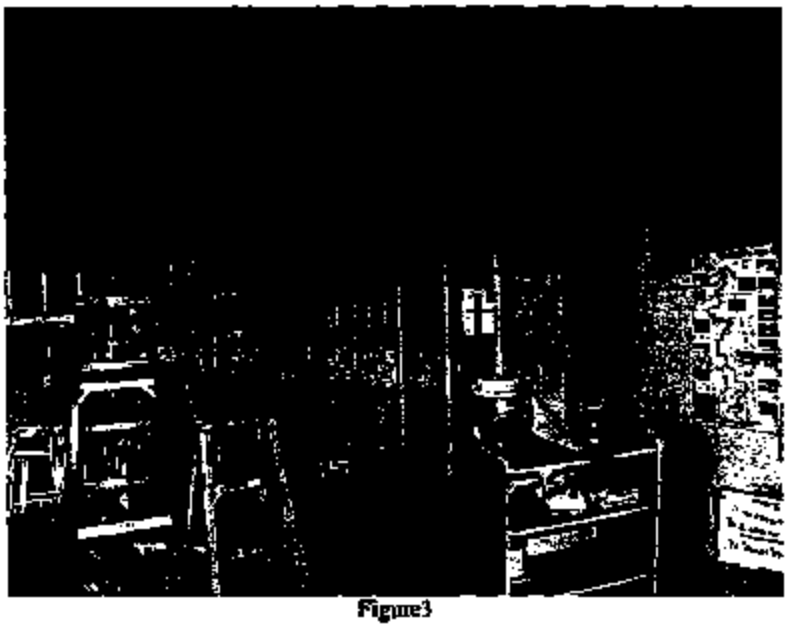


Figure3

09.06 The level of confidence for this opinion is conclusive.

10.0 DISCLOSURE

THIS **CONFIDENTIAL** REPORT IS DIRECTED SOLEY TO THE CLIENT.

This confidential report has been prepared for Mr. Eli Garcia of Allstate Insurance. Any reproduction or distribution of this report is the sole responsibility of the client.

Edward S. Sanchez
CFEI, CFI, CVFI
Fire Loss Analysis, Inc.
Texas License #: A04053

Alfred G. Martinez
Fire Investigator
CFEI, CFII, CVFI

11.0 PHOTO INDEX

The photographs enclosed in the Origin and Cause section of this report are only a small representation of the fire scene with a concentration on the area of origin. A CD-ROM copy containing the complete set of photographs taken is also enclosed for your review.

To view all photos, open the "My Computer" icon on desktop and click on the CD-ROM drive. A window with all JPEG image icons will appear, click on icon to view each individual picture.

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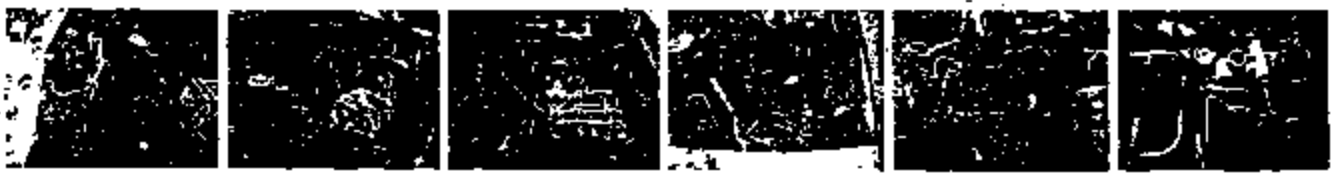

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12.0 ENCLOSURES

12.01 CD-ROM containing complete set of photographs

12.02 Fire Examination Videotape

12.03 Eduardo S. Sanchez Resume

12.04 Alfred G. Martinez Resume

NATIONAL

▪

LOSS

▪

CONSULTANTS

FIRE ORIGIN AND CAUSE INVESTIGATION

[redacted]

NEW BRAUNFELS, TEXAS

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ALLSTATE INSURANCE COMPANY
HOUSTON, TEXAS

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Houston ▪ Dallas ▪ San Antonio
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TABLE OF CONTENTS

[redacted]

INTRODUCTION:

On February 27, 2004, National Loss Consultants received an assignment from Ms. Pat Jones of Allstate Insurance Company, requesting an origin and cause investigation of a residential structure fire, located 1243 Vista Bonita in New Braunfels, Texas. According to a report prepared by the New Braunfels Fire Department, the fire occurred on February 25, 2004, at approximately 9:41 p.m.

An appointment was set with the insured [redacted] for John Ragone, Fire Consultant with National Loss Consultants, to conduct the scene examination on February 28, 2004. Following are the findings and conclusions of this investigation:

PROPERTY DESCRIPTION:

The risk is a one-story, single-family dwelling, which is positioned upon a concrete slab foundation and faces southwest. Exterior walls are of brick veneer, with the roof consisting of composition shingles.

Interior walls and ceilings are of sheetrock. Floor coverings consist of ceramic tile and carpet over underlying pad. The structure is comprised of a kitchen, breakfast area, living room, dining area, utility room, garage, three (3) bedrooms, and two (2) bathrooms. Electricity and natural gas, both of which were "on" at the time of the fire, service the residence.

ORIGIN AND CAUSE:

The fire originated within the north central region of the garage **(RE: Diagram No. 1)**. The factors of ignition for the fire consist of a heat source provided by an electrical fault within the brake pressure switch installed on the master cylinder of the 1998 Ford Explorer. In my opinion, the fire is accidental in nature.

INVESTIGATION:

On February 28, 2004, I traveled to the aforementioned address to investigate and determine the origin and cause of the fire. [redacted] met me at the scene. An interview with [redacted] is included in the "Interviews/Witnesses" section of this report.

Exterior examination revealed only moderate soot and smoke deposits onto the brick installed above the garage door **(RE: Photograph Nos. 1 – 4)**. It was noted that a fire-damaged automobile was positioned in front of the western region of the garage. According to [redacted] the vehicle was removed from its pre-fire position.

The electrical service (watt-hour) meter and primary circuit breaker panel were mounted near the front end of the left exterior wall **(RE: Photograph No. 5)**. The watt-hour meter was still in place and functional at the time of the scene examination. Examination of the primary circuit breaker panel revealed all of the

circuit breakers installed within the panel were in the "on" position (**RE: Photograph No. 6**). A secondary circuit breaker panel, located on the rear wall of the garage (**RE: Photograph No. 7**), also provided over-current protection. Closer examination of said panel revealed that all of the circuit breakers installed within the panel were in the "on" position (**RE: Photograph No. 8**).

The natural gas meter was mounted near the approximate center of the left exterior wall (**RE: Photograph No. 9**). Said meter was still in place and functioning at the time of the scene examination.

Interior examination revealed only minimal smoke damage throughout the structure, with exception to the garage (**RE: Photograph Nos. 10 – 12**). Closer examination of the garage revealed a distinct line of demarcation on all four walls. Said lines of demarcation separated an area of heavy soot and smoke deposits, which extended from approximately two feet (2') below ceiling level upwards, and the remainder of the wall surfaces, which suffered only moderate to light soot and smoke damage. The lines of demarcation represented the location of thermal interface (i.e., lowest level of the hot gas layer) within the room during the last stages of the fire. The ceiling exhibited uniform soot and smoke damage over its surface. None of the contents of the room exhibited evidence of intense heat exposure. According t[redacted] the vehicle noted during the exterior examination was positioned in the garage at the time of the

fire. The vehicle was identified as a 1998 Ford Explorer. The following identifiers were collected from the vehicle:

- Vehicle Identification Number (VIN): 1FMZU34E8W[redacted] **(RE: Photograph No. 13)**
- Texas License Plate Number [redacted] **RE: Photograph No. 14)**

At that point, the fire pattern analysis was focused on the vehicle. Said analysis was initiated on the vehicle's exterior. The front exterior exhibited consumption of the paint and plastics, melting of plastics, and oxidation of the metal components **(RE: Photograph No. 15)**. The right (passenger's side) exterior exhibited similar damage in the front fender area **(RE: Photograph No. 16)**. Other areas of the right exterior exhibited only soot and smoke damage and deformation of plastics. The rear exterior suffered relatively minimal fire-related damage **(RE: Photograph No. 17)**. Examination of the left (driver's side) exterior revealed damage similar to that noted to the right side exterior **(RE: Photograph No. 18)**.

The interior of the vehicle was examined next. Mostly light to moderate soot and smoke damage was noted to the vehicle's interior. Some heavy soot and smoke deposits were noted on the left portion of the front windshield. It was further noted that portions of the dash assembly were deformed and melted in the same

area where the heavy soot and smoke deposits were noted **(RE: Photograph No. 19)**. A trash bag was noted in the back seat area of the vehicle. According to [redacted] the bag contained the debris removed from the garage after the fire.

The next area examined was the engine compartment. Damage noted within the engine compartment was extensive throughout. The most severe damage was noted in the left region. Damage in left area included consumption and melting of plastics, consumption of wiring insulation and rubber insulating material on hoses, and oxidation of metals **(RE: Photograph Nos. 20 and 21)**. It was further noted that the brake fluid reservoir was completely consumed. Slight melting was noted to the master cylinder **(RE: Photograph No. 22)**. The location of the most severe damage was noted at the master cylinder and became progressively less severe in an outward direction from there. The damage noted on the right side of the engine compartment was considerably less severe **(RE: Photograph No. 23)**. Using the evidence mentioned above, it was determined that the fire originated in the left rear region of the engine compartment, which was located in the north central region of the garage at the time of the fire.

Once the area of fire origin was established, a search was initiated for possible sources of ignition within said area. The only items found within the area of fire origin with the potential to serve as the source of ignition for the fire was related to the electrical system. It was noted that the only fuse that was "blown" was the

fuse in position number "13" of the fuse box (RE: Photograph Nos. 24 and 25). According to the owner's manual for the vehicle, said fuse protected the circuit that included the brake pedal position switch and the brake pressure switch (RE: Photograph No. 26).

At this point, it was necessary to enlist the assistance of Mr. Mike Servat, Consulting Engineer with National Loss Consultants. Mr. Servat was assigned the task of performing a failure analysis on the aforementioned system. According to Mr. Servat's analysis, a failure occurred within the brake pressure switch. Said switch is installed on the master cylinder and functions as an emergency deactivation device for the cruise control system. The circuit that supplies electrical power to the switch is the only circuit that would be energized within that area of fire origin while the ignition is in the "off" position. It was reported by [redacted] that the vehicle was parked and not in use for approximately one and one half (1 1/2) hours prior to the fire.

INTERVIEWS/WITNESSES:

[redacted] (Insured)

New Braunfels, Texas
Cell Phone: [redacted]

According [redacted] he purchased the home new in 2000. Since owning the home [redacted] has not experienced any problems with the electrical or gas systems. At approximately 9:30 a.m. on the day of the fire [redacted] heard what

he thought was an explosion in the garage. Upon investigating [redacted] saw flames emitting from the driver's side of the engine compartment. Said flames were emitting from the side of the hood and from the driver's side wheel well [redacted] described the flames as extending up towards the ceiling. At that point [redacted] attempted, unsuccessfully, to extinguish the fire with both a fire extinguisher and a water hose. The fire department was notified of the fire by [redacted] when [redacted] pressed the panic button on the system's control panel. Approximately thirty (30) minutes prior to the fire, [redacted] was in the garage and noticed a strange odor. The odor seemed to be coming from the engine compartment of the vehicle. At that time, [redacted] opened the hood and noticed nothing visually. The vehicle was last used to drive home from church approximately one and one half (1 1/2) hours prior to the fire. The vehicle was purchased in 1999, and at the time of the fire, had approximately one hundred thirty, thousand (130,000) miles of use.

CONCLUSION:

The fire scene examination revealed a single area of fire origin, located within the north central region of the garage. The factors of ignition for the fire consist of a heat source provided by an electrical fault within the brake pressure switch installed on the master cylinder of the 1998 Ford Explorer, which was parked in the aforementioned area. The switch, which is a safety oriented device associated with both the cruise control and braking systems of the vehicle,

faulted and consequently heated nearby materials to the point of ignition. In my opinion, the fire is accidental in nature.

The investigation and analysis of this fire loss was performed in accordance with the Scientific Method as prescribed in the *National Fire Protection Association National Fire Codes NFPA 921 – Guide for Fire and Explosion Investigations* and *NFPA 1033 – Standard for Professional Qualifications for Fire Investigator.*

Respectfully submitted,
NATIONAL LOSS CONSULTANTS

John Ragone, CFEI, CVFI
Fire Consultant

JR/ble
Enclosure

INTRODUCTION:

At your request, an engineering examination was performed on the remaining electrical system of a 1998 Ford Explorer that reportedly caused a fire at the [redacted] residence, located at [redacted] in New Braunfels, Texas. The date of the loss was February 25, 2004. The vehicle was parked at the residence at the time of the fire.

DESCRIPTION:

Under investigation are the remains of a 1998 Ford Explorer (**RE: Photograph Nos. 27 - 31**). The VIN number is 1FMZU34E8W[redacted] The license number is G99-MBG. A fuel-injected V6 engine powered the vehicle. The odometer reading was not available, due to the fire damage to the dashboard on the left side of the vehicle (**RE: Photograph No. 32**). The vehicle was black in color.

INVESTIGATION:

The right front headlight and fog lamp were intact. The left front headlight and fog lamp were destroyed by the fire (**RE: Photograph Nos. 33 and 34**). The front grill of the vehicle was mostly consumed by the fire. The windshield was partially missing in the area of the driver's seat. The damage to the dashboard was concentrated on the driver's side.

The investigation moved to the right side of the engine compartment (RE: Photograph No. 35). The heater hoses, air-conditioning receiver/dryer, and the air-conditioning evaporator were mostly intact. Moving to the front of the engine, the alternator on the front of the engine displayed signs of flame impingement, while the radiator cooling fan was consumed by the fire (RE: Photograph No. 36). The upper radiator hose was partially consumed by the fire. The fan belt was consumed by the fire also. Moving to the left side of the engine, the vacuum hose from the power brake booster to the intake manifold had been consumed by the fire. The spark plug wiring on the left side of the engine had been consumed by the fire. The battery was not present in the vehicle at the time of examination (RE: Photograph Nos. 37 and 38).

Examination in the area of the brake master cylinder revealed the remains of the brake pressure switch that is used to de-energize the cruise control feature upon application of the brakes of the vehicle. The switch was examined and found to have been severely damaged as a result of the fire. The switch showed internal melting of the contact material (RE: Photograph No. 39). The melting of the contact material indicates that the switch is unable to interrupt the flow of electric current to the Speed Control Servo Amplifier Assembly. This condition caused the fire by the heat produced by the failing brake pressure switch. There was also fire damage to the starter relay and the auxiliary relay box mounted on the

left fender. However, there was no evidence to indicate that either of these items caused the fire.

CONCLUSION:

In my opinion, the fire was caused by the failure of the brake pressure switch.

All methods of evidence collection and preservation were done in accordance with ASTM E-1188, "Standard Practice for Collection and Preservation of Information and Physical Items by a Technical Investigator". All means of testing whether destructive or non destructive performed under liability litigation were conducted in accordance with the guidelines outlined in ASTM E-860, "Standard Practice for Examining and Testing Items That are or May Become Involved in Litigation".

At this point, we are closing our file. If you have any questions or require additional information, please do not hesitate to contact us.

Respectfully submitted,
NATIONAL LOSS CONSULTANTS

Michael D. Servat, P.E.
Consulting Engineer

MDS/file
Enclosures

STATE OF TEXAS
MICHAEL D. SERVAT
43860
LICENSED PROFESSIONAL ENGINEER

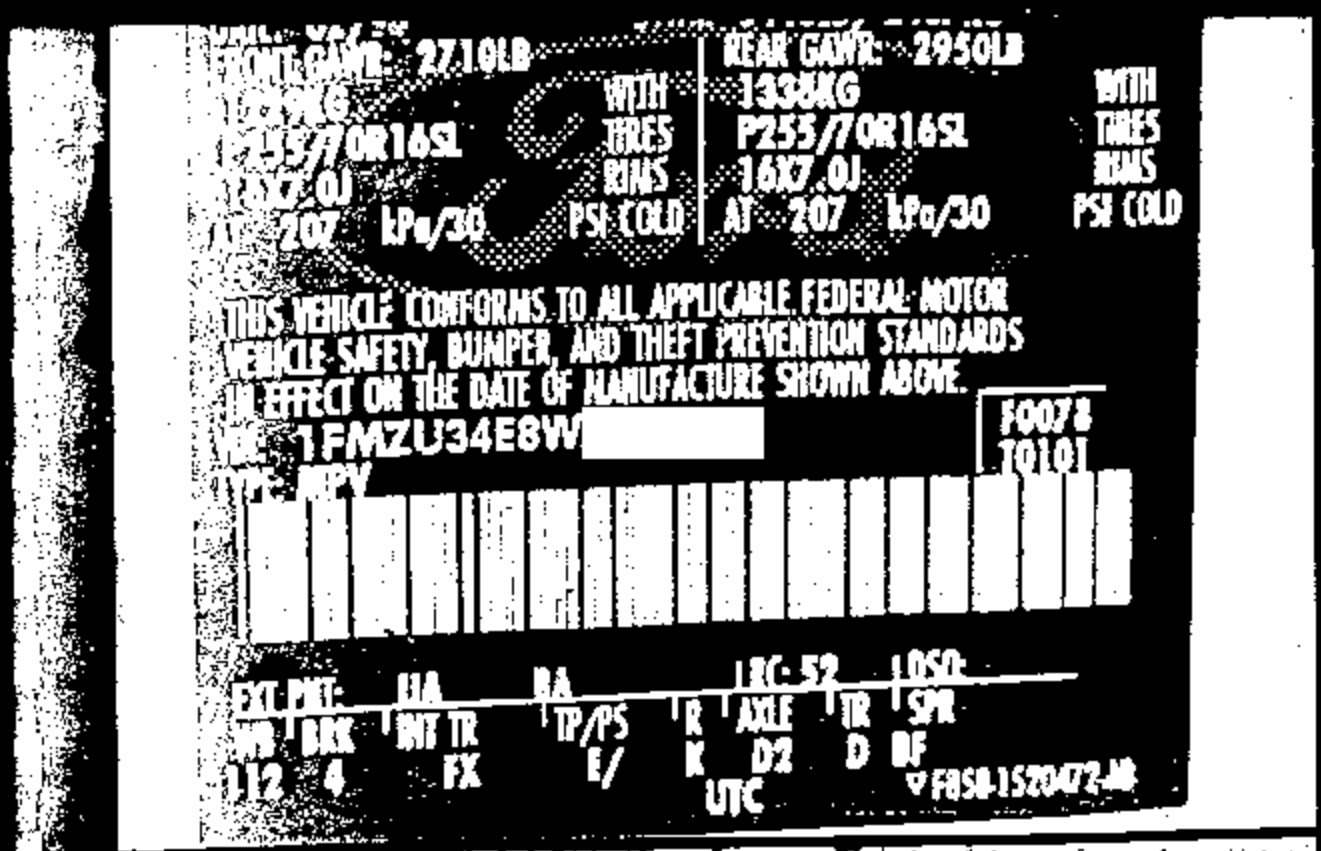
PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 13

View of the manufacturer's identification found on the driver's side doorframe of the 1998 Ford Explorer.

PHOTOGRAPH NO. 14

View of Texas license plate attached to the front of the vehicle.


REAR GAWR: 2950LB
1338KG
WITH
TIRES
RIMS
P255/70R16SL
16X7.0J
AT 207 kPa/30
PSI COLD
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR
VEHICLE SAFETY, BUMPER, AND THEFT PREVENTION STANDARDS
IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.
1FMZU34E8W
F0078
TQ101
TYPE MPV
EXT
WB
112
BRK
4
HA
INT TR
FX
RA
TP/PS
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K
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AXLE
D2
UTC
TR
D
DSO
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DF
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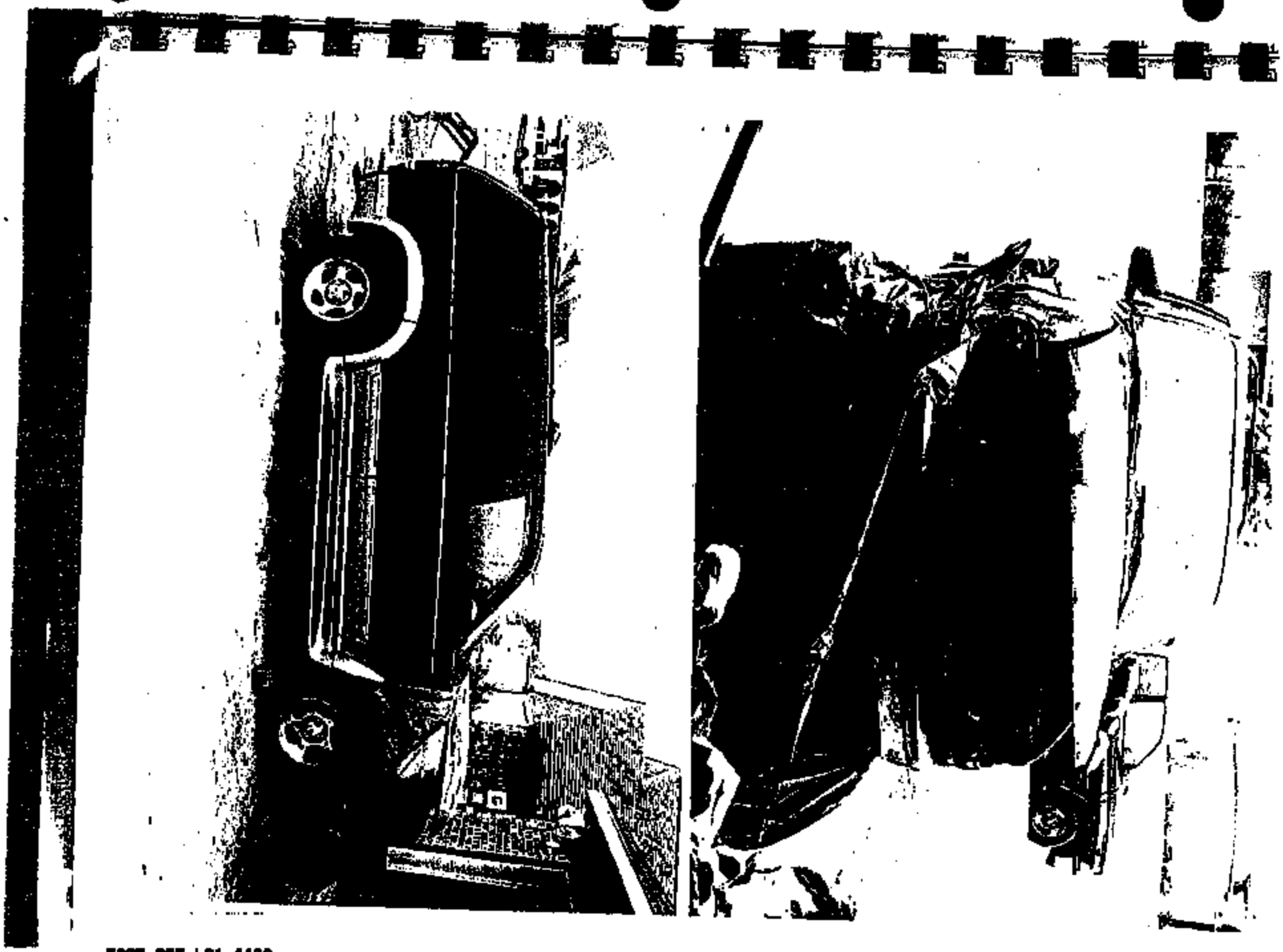


EAGS-865-LC1-4439

PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 15

View of front exterior of the vehicle.

PHOTOGRAPH NO. 16

View of right (passenger's side) exterior of the vehicle.

PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 17

View of rear exterior of the vehicle.

PHOTOGRAPH NO. 18

View of right (driver's side) exterior of the vehicle.

EM3-005-LC1-4448

PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 19

View of the front left region of the interior.

PHOTOGRAPH NO. 20

View of the left interior of the engine compartment.

EB3-695-LC1-4442

PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 21

Same as previous photograph, different angle.

PHOTOGRAPH NO. 22

View of the master cylinder. Please note the melting that occurred. Also, please note that the brake fluid reservoir was consumed.

EA05-005-LC1-4444

PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 23

View of the right interior of the engine compartment.

PHOTOGRAPH NO. 24

View of the fuse box. The finger indicates the only "blown" fuse within the box.

6
10

PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 25

Another view of the "blown" fuse.

PHOTOGRAPH NO. 26

View of the portion of the owner's manual that described the circuit with the "blown" fuse. The arrow indicates the related information.

PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 27

Photograph of front of vehicle.

PHOTOGRAPH NO. 28

Photograph of rear of vehicle.

559280

PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 29

Photograph of left rear side of vehicle.

PHOTOGRAPH NO. 30

Photograph of right rear side of vehicle.

PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 31

Photograph of left front fender of vehicle.

PHOTOGRAPH NO. 32

Photograph of driver's side of dashboard of vehicle.

EM06-005-LC1-4454

PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 33

Photograph of grill of vehicle.

PHOTOGRAPH NO. 34

Photograph of front seat of vehicle.

E925-605-LC1-4456

PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 35

Photograph of right side of engine compartment.

PHOTOGRAPH NO. 36

Photograph of front of engine.

ER85-065-LC1-4458

PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 37

Photograph of left side of engine compartment (Photograph 1 of 2).

PHOTOGRAPH NO. 38

Photograph of left side of engine compartment (Photograph 2 of 2).

E555-555-LC1-4468

PHOTOGRAPH EXPLANATION

PHOTOGRAPH NO. 39

Photograph of master cylinder with brake pressure switch.

E085-685-LC1-4462

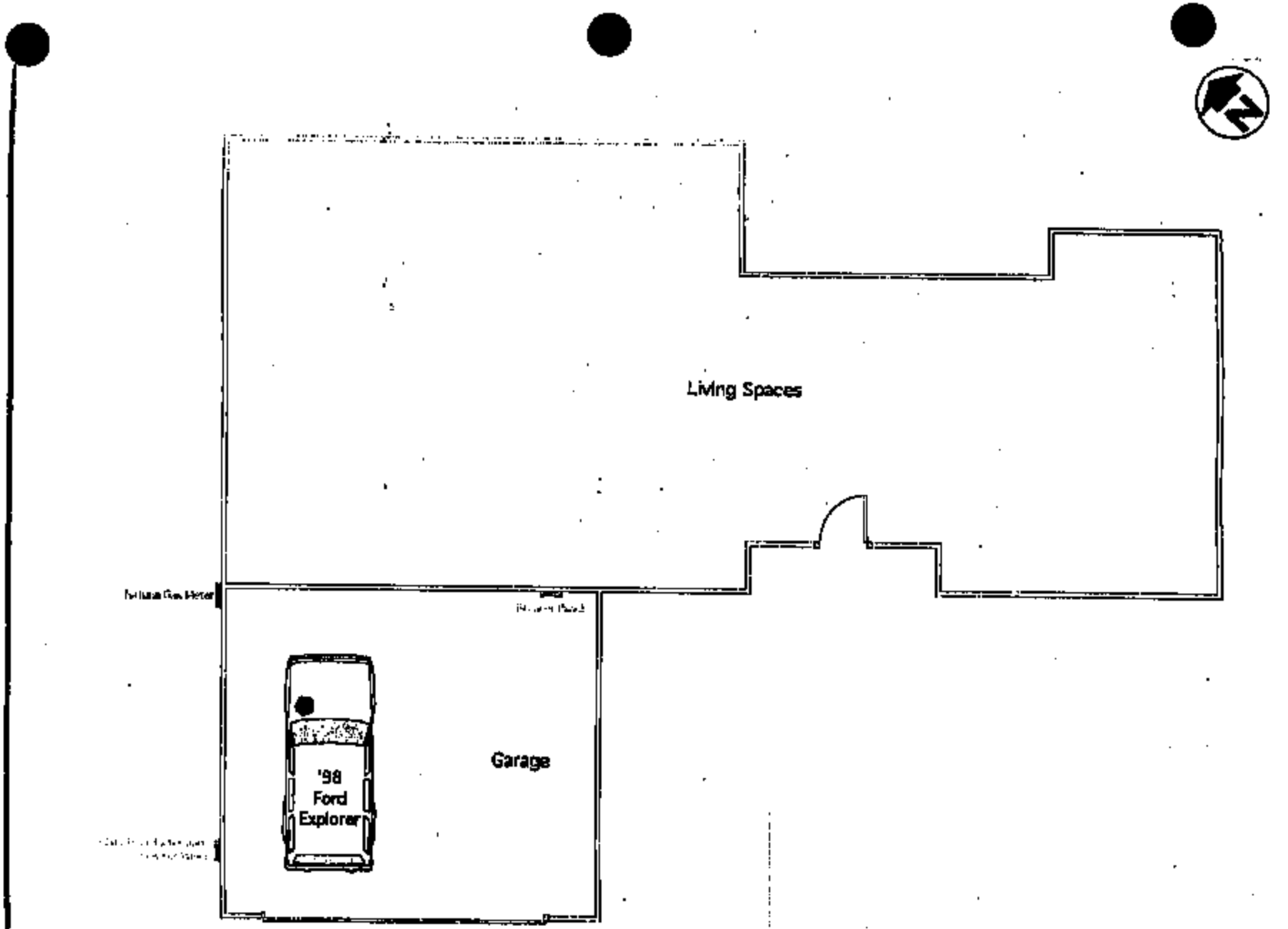


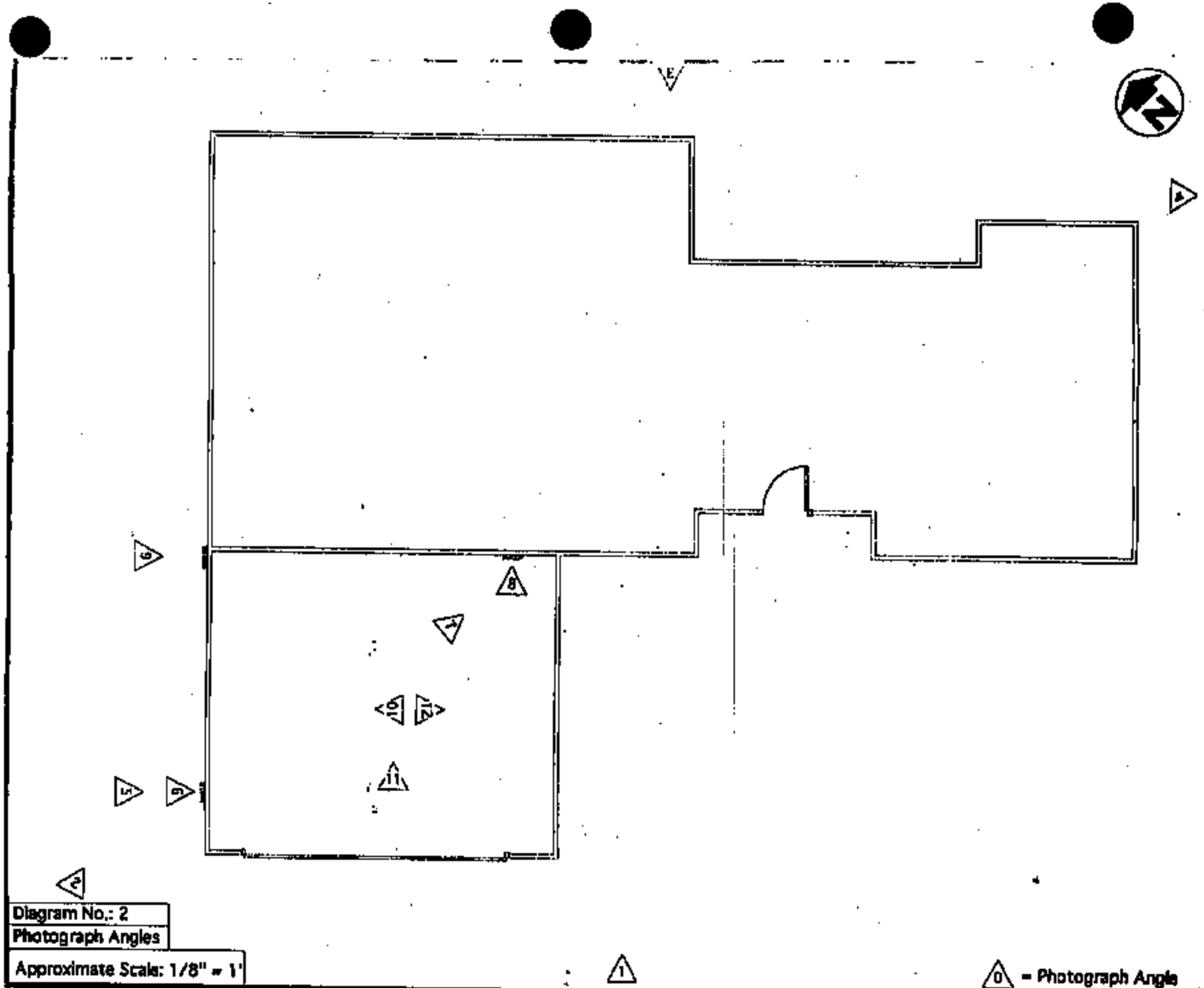
Diagram No.: 1

Partial Floor Plan

Approximate Scale: 1/8" = 1'

● = Area of Fire Origin

EMB-883-LCI-1453


E
N
Diagram No.: 2
Photograph Angles
Approximate Scale: 1/8" = 1'
= Photograph Angle

Basic	
Alarm Date and Time	21:48:00 Wednesday, February 25, 2004
Arrival Time	21:44:00
Controlled Time	22:55:00
Last Unit Cleared Time	22:55:01
Response Time	0:03:00
Priority Response	Yes
Completed	Yes
Reviewed	Yes
Fire Department Station	STA5
Shift	B
Incident Type	111 - Building fire
Aid Given or Received	N - None
Alarms	1
Action Taken 1	11 - Extinguish
Action Taken 2	12 - Salvage & overhaul
Apparatus - Suppression	6
Personnel - Suppression Personnel	16
Property Loss	$25,000.00
Contents Loss	$0.00
Property Value	$25,000.00
Contents Value	$0.00
Detector Alerted occupants	1
Hazardous Material Released	N - None
Mixed Use	NN - Not mixed use
Property Use	419 - 1 or 2 family dwelling
Location Type	Address
Address	1243 Vista Bonita N/A
City, State Zip	New Braunfels, TX 78130
District	3

Fire	
Structure Type	1 - Enclosed building
Number of Residential	1
Number of Buildings Involved	1
Area of Origin	47 - Vehicle storage area; garage, carport
Heat Source	UU - Undetermined
Item First Ignited	81 - Electrical wire, cable insulation
Confined To Origin	1
Type of Material	UU - Undetermined
Cause of Ignition	U - Cause undetermined after investigation
Contribution To Ignition 1	UU - Undetermined
Human Factors	None
Suppression Factor 1	NNN - None
Mobile Equipment Involved	3 - Involved in ignition and burned
Mobile Equipment Type	11 - Passenger car.
Mobile Equipment Make	FO - Ford
Mobile Equipment Model	Explorer

Incident Report

New Braunfels Fire Department

2004-0000031-000

Fire	
Mobile Equipment Year	1998
Mobile Equipment VIN	1FMZU34E3W[redacted]
Mobile Equipment License	G99MBG
Mobile Equipment State	TX

Structure	
Status	2 - Occupied and operating
Floor of Origin	1
Building Length	20
Building Width	20
Total Square Feet	400
Detector Presence	Yes
Detector Type	1 - Smoke
Detector Power	4 - Hardwire with battery
Detector Operation	2 - Detector operated
Detector Effectiveness	1 - Alerted occupants, occupants responded

End of Report

RECEIVED JAN 2005

PRIVILEGED & CONFIDENTIAL

Office of the General Counsel

Ford Motor Company
Parklane Towers West
Suite 360
Three Parklane Boulevard
Dearborn, Michigan 48126-2568

September 27, 2004

Allstate
16700 E. Hardy, Suite A
Houston, TX 77032-1125
ATTENTION: DIANE GONZALES

RE: Claimant: [redacted]
Your Claim #:
DOL: September 17, 2004

Dear Ms. Gonzales:

We acknowledge your recently submitted subrogation claim letter dated September 23, 2004. As per our telephone conversation, please be advised that I have forwarded this preliminary information on to our outside expert; Newell Investigative Services, Inc. They will contact David Reiter of Verfie Forensic Engineering LLC as per your directions, to set up an inspection.

In order to assist us in evaluating your claim, we request that you provide us with the following information: (Please note that the information requested is in regard to the Ford manufactured vehicle.)

☒ 1. Attach your Insured's statement with a complete description of the incident, including events that occurred prior to and subsequent to the loss.
☒ 2. A copy of the police and/or fire report.
☒ 3. Original color photographs of the vehicle's collision/fire damage & the alleged defective parts, from several different angles.
☐ 4. Original color photographs of the inside of the vehicle showing the steering wheel, dash and roof areas.
☒ 5. Original color photographs of the accident / fire scene from several different angles.
☒ 6. Attach a copy of your expert's report and the expert's original photographs.
☒ 7. Attach the repair estimate, repair order, or your total loss worksheet for the vehicle's damage and any losses associated with this incident, and copies of draft payments.
☒ 8. Attach the complete service history for the subject vehicle, including any tune-ups or oil changes.

Please answer the following in the space provided. If you need additional space, please use the back of the form;

9. What was the city and state of occurrence: Pasadena, TX RECEIVED
10. The 17 digit vehicle identification number: 0 RECEIVED 1FMZU32E8W [redacted]
11. What was the mileage at time of occurrence: 125,306

12. What is the alleged defect: Brake deactivation switch

13. Has the alleged defective part been repaired or replaced? (circle one) Yes or (No)

14. What is the current location of the vehicle, and the alleged defective part(s)? Stock # 402P
Baytown City Auction Pool [redacted], TX [redacted]

15. List all after market additions or modifications that were made to the vehicle:
None

16. Was the engine running? (circle one) Yes or (No)

17. Were the keys in the ignition? (circle one) Yes or (No)

18. Was this vehicle purchased new or used: used

If purchased used, provide the date of purchase, mileage at the time of purchase, and from whom the vehicle was purchased: 9/25/01 95,771 miles
not sure where

Once we are in receipt of the requested information, it will be reviewed and you will be notified of our decision concerning your claim. Should you not send all of the requested information and materials, we will assume that you are not interested in pursuing a claim and we will close our file.

Please be advised that all necessary steps should be taken to ensure that the subject vehicle and all of its component parts are maintained and preserved for trial. Ford Motor Company has the right to inspect the vehicle and remove and test any component part that you claim to be defective, and to be presented with the vehicle and the subject component part(s) at the time of trial, should litigation ensue from this informal claim.

If you propose to repair the vehicle for continued usage, such repairs may not be performed until after Ford Motor Company has inspected the vehicle and removed and tested any component part you claim to be defective or advised you in writing that it does not intend to perform such inspection and/or testing at this time. But even in that event, Ford Motor Company will insist that all components claimed to be defective are maintained and preserved for trial.

Sincerely,

Shawn L. Norton

Shawn L. Norton
Claims Analyst /
Litigation Assistant

DESK: QDG INVOLVED PERSON STATEMENT PAGE: 1 OF 1
154 078610 8 DOL: 09 - 17 - 2004 INSD: [redacted] FIRMIN
ID: 01 [redacted] FIRMIN

HOME PHONE: [redacted] BUS PHONE: [redacted] HRS: -
STMT EMPL NAME: DIANE C GONZALES
DATE: 09 - 18 - 2004 STATEMENT TYPE: INTERVIEW
EFFECT ON INSD LIAB AND/OR CLMT DAMAGES: (0=NONE 1=FAV 2= UNFAV)
NOTIFY:
ANALYSIS:
PARKED IN THE ROAD AT THE END OF THE ROAD AT THE END OF THE DRIVEWAY
THE TRUCK WAS ON FIRE. HER NEIGHBOR CALLED AND TOLD THEM THE TRUCK WAS ON FIR
E. THE WHOLE FRT END IS BURNED, MELTED. SMOKE INSIDE THE TRUCK, SOOT INSIDE,
TIRES MELTED, ENGINE BURNED BLACK CHAR, WIRES AND PIPES MELTED. [redacted]AS
IN LAS VEGAS, SO PARKED AT THE AIRPORT FOR ONE WEEK. HE DROVE IT FROM THE AIRP
ORT, IT WAS PARKED 30-45 MIN PRIOR TO THE FIRE WHEN NEIGBORS CALLED.
HAD PROBLEMS WITH THIS TRUCK APROX 2 YRS AGO SO HAD TO HAVE THE ENGIEN REPLACE
D. EDDIE BAUER EDITION
NOT SURE OF MILES
NO REPAIRS RECENTLY
09/18/2004

PF5-SCHED F/U PF7-BACKWD PF8-FRWD PF9-PRINT PF11-PREV STMT PF12-NEXT STMT

V/C1/3

PEARLAND VOLUNTEER FIRE DEPARTMENT
FIELD REPORT

INCIDENT #: 043287 DATE: ~~9/17/04~~ 9/17/04 D 2038 A 2042 C 2121

INCIDENT ADDRESS: [redacted] BLOCK OF Colleen Dr. @ Misty APT/SPACE:

INCIDENT TYPE: CODE: 131 DESCRIBE: Vehicle Fire

☐ AUTO ☐ MUTUAL AID ☐ GIVEN ☐ RECEIVED AGENCY FDIC # PHONE #: BOF FF

DISTRICT: ☐ 1 ☐ 2 ☒ 3 ☐ 4 ☐ CITY ☐ ETJ ☐ COUNTY ☐ OTHER AGENCY

SPECIAL STUDY: SUBDIVISION Parkview OTHER

ACTION TAKEN: CODE: 11 DESCRIBE: Extinguished

RESPONDING APPARATUS: 31 32 351 B1 B2 B3 E10 E11 Q14
B30 B31 B33 E31 B35 E41 E42 Q44 B43

RESPONDING PERSONNEL: 32, 143 76, 9, 6, 189, 158, 211, 63, 203, 95, 150, 162, 187, 95, 2

CASUALTIES: ☐ NONE ☐ CIVILIAN ☐ DEATH ☐ INJURY # ☐ FIREFIGHTER ☐ DEATH ☐ INJURY #

HAZ-MAT: ☐ NONE-N ☐ NAT GAS-1 ☐ PROPANE-2 ☐ GASOLINE-3 ☐ KEROSENE-4 ☐ DIESEL-5 ☐ HOUSEHOLD-6
☐ MOTOR OIL-7 ☐ PAINT-8 ☐ OTHER-9

AIRED PROP. USE: ☐ NONE-NN ☐ ASSEMBLY-10 ☐ EDUCATIONAL-20 ☐ MEDICAL-30 ☐ RESIDENTIAL-40
☐ ROW OF STORES-51 ☐ ENCLOSED MALL-60 ☐ BUSINESS-80 ☐ OFFICE-90 ☐ INDUSTRIAL-00
☐ FARM-66 ☐ OTHER-00

PROPERTY USE: CODE: DESCRIBE:

BUSINESS NAME: PHONE: [redacted]

PERSON INVOLVED: [redacted] ☒ OWNER ☐ MANAGER ☐ OCCUPANT

ADDRESS: ☒ AS ABOVE: PHONE:

REMARKS: C57 HHJ 98 Ford Explorer - Owner had parked in the street approximately 40 minutes. Owner drove from Intercontinental Airport. Owner was inside house when neighbor across the street notified him that his vehicle was on fire. Fire was contained to the engine compartment. Pearland PD was also on location.

SEE: ☐ BACK ☐ INJURY REPORT ☐ CO FORM ☐ FMO REPORT ☐ POLICE REPORT ☐ EMS REPORT ☐ OTHER

ID # 32 Steve Green ID # 143 Steve Vavricka 9/17/04

EMS-905-101-4478

PREMIER CLAIMS INVESTIGATIONS, INC.

5497 Teas Nursery Road Conroe, Texas 77304 Phone (936) 321-4989 • Fax (936) 441-4990

October 22, 2004

Ms. Diane Gonzales
Allstate Insurance
16700 East Hardy, Suite 2A
Houston, Texas 77032

Re: Insured: Firmas [redacted]
Loss Location: [redacted] Texas [redacted]
DOL: 09/17/04
Our File No.: 2K4-09201

Summary and Conclusions

We received a request to conduct an origin and cause investigation on September 20, 2001 with the investigation commencing on September 21, 2004.

Our investigation was supplemented with a vehicle examination, still photographs, claimant and witness interviews. **The cause of the fire is accidental, occurring inside the engine compartment of the vehicle. The brake pressure switch for the cruise control, mounted on the end of the brake master cylinder, developed a high resistance failure to the electrical contacts and ignited the plastic switch housing.**

Our investigation followed nationally recognized guidelines and methodologies regarding fire origin and cause determination. Our opinions expressed in this report are based on the information as known at the time of the report preparation. We reserve the right to modify or amend our opinions if information warranting such a change becomes known. Please refer to our final report for complete details.

Respectfully submitted, RLB MRE

Richard L. Benson, CFEI - NAFI
Senior Fire Analyst
Premier Claims Investigations, Inc.

Enclosures

- Consent form
- Copy of brake pressure switch X-Ray
- Burn pattern addendum
- 51 indexed Photographs taken by David Reiter
- Recorded statement of Sean McLemore

Incident

Paul Jamison – Fire Chief
Pearland Fire Department (281) 652-1913

The fire occurred on September 17, 2004. The Pearland Volunteer Fire Department responded at approximately 8:00 PM. I have called Chief Jamison and left a message regarding suppression information, but have not received a call back. I have also requested a copy of the fire incident report through the Pearland City secretary. I have been advised the report is currently on the desk of the City Attorney awaiting approval for release. It will be forwarded as soon as it is received. The suppression information will also be sent in a supplemental report as soon as it is obtained.

Owner Information

[redacted] *(281)* [redacted] *Ce* [redacted]
Pearland, Texa [redacted] *DOB* [redacted] *SSN* [redacted] *TDL:* [redacted]
Work location: Sysco [redacted] *Houston, Texas* [redacted]
Work phone: [redacted]

[redacted] has owned the vehicle for approximately 3.5 years. He has had repeated mechanical problems with the engine and has had four engines replaced by Bay Area Ford since purchasing it. The problem is related to the crankshaft. The vehicle has approximately 125, 000 miles. The last engine had approximately 24,000 miles on it.

There were other problems. The cruise control stopped working about one month prior to the fire. The last few days before the fire the brake warning light would come on and go off intermittently. The rear brake light bulbs were replaced about 7-8 months before the fire. The socket end seemed to be melted. His stereo backlight would fade in and out and had been doing so for about one year.

He had installed a stereo amp under the rear, left seat. The amp wiring was routed from the amp, down the left side of the vehicle and under the driver's side lower sill panel, through the driver's door jamb, out over the edge of the fender, and into the engine compartment. The wiring was connected directly to the positive post of the battery, without an in-line fuse. The wiring had been in place for several years and presented no problems. He has had no battery problems and no service work on it. The engine oil was changed about 4,000 miles prior to the fire.

On the day of the fire he had driven from the airport to his home. He arrived home at approximately 7:00 PM. He went inside and about 45 minutes later his neighbor across the street knocked on his door and told him his vehicle was on fire. He went outside and observed flames burning out of the left wheel well and under the hood. He tried to get the hood open, but was unsuccessful. He called 911 when first notified of the fire and they arrived a short time later.

He has lived in the neighborhood for 3.5 years and has had no problems with vandalism.

Witnesses

[redacted]

Pearland, Texas [redacted] *DOB:* [redacted]

[redacted] had just arrived home with his two friends, [redacted] It was approximately 8:00 PM. They smelled something burning, but noticed nothing unusual. They went inside his home and then came back out about one minute later. At that time they discovered a small flame burning out of the left fender well of a Ford Explorer parked along the curb across the street. [redacted] ran across the street and knocked on his neighbor's door and alerted him to the fire. By the time they returned to the edge of the street the fire had spread rapidly and had grown quite large. His neighbor called 911 and they arrived soon. [redacted] explained the neighborhood is quite and there have been no problems with vandalism. He gave me a recorded statement as to his observations the night of the fire.

Engine Components

An examination of the engine compartment revealed no obvious anomalies. All components appeared to be in place. The plastic and rubber components on the left side of the engine exhibited overall general melting. The top of the power steering pump was destroyed by flames. The flame damage on top of the engine reveals flame movement from left to right, with the damage diminishing toward the right side. The plastic reservoir for the master cylinder brake fluid was destroyed, adding fuel to the flames and causing an oxidized surface on the brake booster.

The underside of the hood exhibited flame damage along the left edge and in the vicinity of the brake master cylinder. The exterior left fender exhibited extensive flame damage approximately the width of the tire. The paint was destroyed in this area.

Burn Pattern Analysis

Our examination revealed the heaviest flame damage occurred in the left, rear corner of the engine compartment, at the location of the brake master cylinder. The top of the battery was melted, but exhibited no obvious signs of failure. A conductor found connected to the positive post was routed along the left side of the engine compartment to the left, rear corner, where it exited the engine compartment. This conductor serviced a stereo amp located under the rear seat of the vehicle. The wire had arced through near the battery, at a point where it crossed over a metal bracket on the left interior

fender surface of the engine compartment.

A separate wire was found arced to the amp wire along the left interior fender.

An examination of the amp wire alone offered no help in establishing its role in the cause of the fire. A more comprehensive examination revealed the brake pressure switch, mounted on the end of the brake master cylinder, was charred heavily.

In order to establish its role in the cause of the fire the switch was removed and an X-ray was taken of it. The X-ray revealed the internal switch connections were destroyed from an internal high resistance failure.

Vehicle

Make: Ford
Model: Explorer – Eddie Bauer Edition
Color: White
VIN #:1FMZU32E8W[redacted]
Texas License[redacted]
Wheels: Alloy

Observed Body Damage and Condition

The vehicle appeared to be in good condition at the time of the fire with no observed body damage.

Gas System

An examination of the fuel system revealed no anomalies. The rubber fuel lines were partially melted on the left side of the engine compartment, but did not seem to contribute to the fire spread.

Battery

The battery was melted across the top. An examination of the connectors revealed no electrical problems or arcing damage.

Fire Origin and Cause

The fire originated on the left side of the engine compartment, at the location of the brake pressure switch, mounted on the end of the brake master cylinder. A high resistance failure to the internal electrical connectors caused the switch body to ignite and subsequently spread to the adjacent plastic brake fluid reservoir.

Investigation Status and Comments

David Reiter, of Verité Forensic Engineering, assisted in examining the vehicle and making a determination as to the cause. He will submit a seperate report on his findings. He can be reached at 1036-A First St., Humble, Texas 77338, (281) 548-3561, fax (281) 548-3562.

We have concluded our investigation into this loss. If there is any other information needed please call us at (936) 321-4989.

Respectfully submitted,

R. L. Benson

Richard L. Benson, CFEI - NAFI
Senior Fire Analyst
Premier Claims Investigations, Inc.

Photographic Index

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2	AREA OF ORIGIN – LEFT ENGINE COMPARTMENT
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PREMIER CLAIMS INVESTIGATIONS, INC.

CONSENT TO ENTER PROPERTY AND TO COLLECT EVIDENCE

File Name: [redacted]
File Number: [redacted]
Date: 09-21-04

My name is [redacted] ***and I give PCI, INC. the authority to enter into my property/premises, including the exterior grounds thereof, located at***

[redacted] Pearland, Texas [redacted]

The authority granted is for the date listed and from day to day until the premises investigation is compete. PCI, INC. warrants they carry their own liability insurance.

The authority granted includes the right to investigate the insurance loss or matter for which PCI, INC. has been assigned by the following person or firm:

Diana Gonzales & Allstate Insurance

I have the right to grant this authority. Further, I give the PCI, INC. representative the right to collect any evidence reasonably required to fulfill their assignment. The items taken will be listed in the PCI, INC. confidential report to PCI's client and will only include those items needed to complete their assigned tasks. Further, I give the Fire Department and/or any public Fire or Police Investigator instructions and authority to turn over any evidence they have collected on this matter to the PCI, INC. fire investigator, unless they are legally prevented from making the transfer, such as in the case of a non-accidental fire loss. I also give PCI, Inc. my authority to destroy any evidence they have collected after the claim has

[redacted] 9/21/2004
Date

9-21-

PCI, INC. Representative

Witness (IF One is Available)

FERMAN

EX23-023-LC1-4478

Premier Claims Investigations, Inc.
5497 Texas Nursery Rd.
Conroe, TX 77304-4623

Phone (936) 321-4989
Fax (936) 441-4990

NFPA 921 is a Guide for Fire and Explosion Investigations. This document was first printed in 1992, with subsequent editions in 1995, 1998, 2001 and 2004. The following information comes from the latter and deals with various burn patterns utilized by fire investigators to determine the origins and causes of fire losses. Premier Claims Investigations, over the years, has verified the various burn pattern and electrical system reaction information found in this document. This verification has been done with a variety of small and full scale burn tests as well as through review of numerous documented fire tests done by various laboratories and testing agencies. The pattern analysis was also verified in the NIST burn pattern testing and in the USFA burn pattern testing and these principles and findings are accepted in the fire investigation community. A controlled full burn analysis by Verité Forensic Engineering has also documented and verified various aspects of the NFPA 921 document (Arc Map Testing) which includes burn pattern production and analysis.

PCI Burn Pattern Addendum from NFPA 921

6.1.1 One of the major objectives of a fire scene examination is the recognition, identification, and analysis of fire patterns. The analysis of fire patterns is performed in an attempt to trace fire spread, identify areas and points of origin, and identify the fuels involved.

6.2 Dynamics of Pattern Production

6.2.1 General. The recognition, identification, and proper analysis of fire patterns by an investigator depends on an understanding of the dynamics of fire development and heat and flame spread. This recognition, identification, and proper analysis includes an understanding of the way that the three modes of heat transfer (conduction, convection, and radiation) produce the fire patterns and the nature of flame, heat, and smoke movement within a structure. *(See Chapter 5.)*

6.2.1.1 The damage created by flame, radiation, hot gases, and smoke creates patterns that investigators use to locate the area or point of fire origin.

6.2.1.2 The patterns seen by an investigator can represent much of the history of the fire. Each time another fuel package is ignited or the ventilation to the fire changes, the rate of energy production and heat distribution will change. Any burning item can produce a plume and thus a fire pattern. Determining which pattern was produced at the point of origin by the first material ignited usually becomes more difficult as the size and duration of the fire increase.

6.2.1.3 The means by which patterns can arise are discussed here. Guidance on the use and interpretation of patterns is found in Chapter 6 and Chapter 17.

6.2.2* Plume-Generated Patterns. Most fire patterns generated by fire plumes are truncated cone patterns. They represent the lines of demarcation created when the three-dimensional (cone) shapes of the fire plumes are truncated or cut by an intervening plane surface such as a wall, ceiling, or bottom of a table or shelf. These truncated cone fire patterns include the following:

(1) V patterns on vertical surfaces
(2) Inverted cone patterns
(3) Hourglass patterns
(4) U-shaped patterns
(5) Pointer and arrow patterns
(6) Circular-shaped patterns

Prowler Claims Investigations, Inc.
5497 Texa Nursery Rd.
Conroe, TX 77304-4623

Phone (936) 321-4989
Fax (936) 441-4990

6.3.1 Lines or Areas of Demarcation. Lines or areas of demarcation are the borders defining the differences in certain heat and smoke effects of the fire on various materials. They appear between the affected area and adjacent unaffected or less affected areas.

6.3.3.2 Whether a hole burned into a horizontal surface was created from above or below may be identified by an examination of the sloping sides of the hole. Sides that slope downward from above toward the hole are indicators that the fire was from above. Sides that are wider at the bottom and slope upward toward the center of the hole indicate that the fire was from below. *(See Figure 6.3.3.2.)*

6.4 Types of Fire Patterns. There are two basic types of fire patterns: movement patterns and intensity patterns. These types of patterns are defined largely by the fire dynamics discussed in Section 5.5. Often a systematic use of more than one type of fire pattern at a fire scene can be used in combination to lead back to the heat source that produced them. Some patterns may display aspects defining both movement and intensity (heat/fuel).

6.4.1 Movement Patterns. Flame and heat movement patterns are produced by the growth and movement of fire and the products of combustion away from an initial heat source. If accurately identified and analyzed, these patterns can be traced back to the origin of the heat source that produced them.

6.4.2 Intensity (Heat) Patterns. Flame and heat intensity patterns are produced by the response of materials to the effects of various intensities of heat exposure. The various heat effects on a certain material can produce lines of demarcation. These lines of demarcation may be helpful to the investigator in determining the characteristics and quantities of fuel materials, as well as the direction of fire spread.

6.5 Surface Effect of Char. Many surfaces are decomposed in the heat of a fire. The binder in paint will char and darken the color of the painted surface. Wallpaper and the paper surface of gypsum and wallboard will char when heated. Vinyl and other plastic surfaces on walls, floors, tables, or counters also will discolor, melt, or char. Wood surfaces will char, but, because of the greater significance of wood char, it is treated in greater detail in 6.5.1 through 6.5.5. The degree of discoloration and charring can be compared to adjacent areas to find the areas of greatest burning.

6.6 Spalling.

6.6.1 General. Spalling is the breakdown in surface tensile strength of concrete, masonry, or brick caused by exposure to high temperatures and rates of heating resulting in mechanical forces within the material. These forces are believed to result from one or more of the following:

(1) Moisture present in uncured or "green" concrete
(2) Differential expansion between reinforcing rods or steel mesh and the surrounding concrete
(3) Differential expansion between the concrete mix and the aggregate (This is most common with silicon aggregates.)
(4) Differential expansion between the fine-grained surface finished layers and the coarser-grained interior layers
(5) Differential expansion between the fire exposed surface and the interior of the slab

Pressler Claims Investigations, Inc.
5497 Texas Norway Rd.
Conroe, TX 77304-4623

Phone (936) 321-4989
Fax (936) 441-4990

6.7 Oxidation. Oxidation is the basic chemical process associated with combustion. Oxidation of some materials that do not burn can produce lines of demarcation and fire patterns of use to fire investigators. For these purposes, oxidation may be defined as a combination of oxygen with substances such as metals, rock, or soil that is brought about by high temperatures.

6.8 Melting of Materials.

6.8.1 General. The melting of a material is a physical change caused by heat. The border between the melted and non-melted portions of a fusible material can produce lines of heat and temperature demarcation that the investigator can use to define fire patterns.

6.8.3 Alloying of Metals. The melting of certain metals may not always be caused by fire temperatures higher than the metals' stated melting point. It may be caused by alloying.

6.9 Thermal Expansion and Deformation of Materials. Many materials change shape temporarily or permanently during fires. Nearly all common materials expand when heated. That expansion can affect the integrity of solid structures when they are made from different materials. If one material expands more than another material in a structure, the difference in expansion can cause the structure to fail.

6.11 Clean Burn. Clean burn is a phenomenon that appears on noncombustible surfaces when the soot and smoke condensate that would normally be found adhering to the surface is burned off. This produces a clean area adjacent to areas darkened by products of combustion, as shown in Figure 6.11. Clean burn is produced most commonly by direct flame contact or intense radiated heat.

6.12* Calcination.

6.12.1 General. The term *calcination* is used by fire investigators to describe the numerous changes that occur in gypsum wallboard surfaces during a fire. Calcination of a gypsum wallboard involves driving the free and chemically bound water out of the gypsum as well as other chemical and physical changes to the gypsum component itself. Calcination involves a chemical change of the gypsum to another mineral anhydrite. Calcined gypsum wallboard becomes less dense from heat exposure than original, pre-fire, non-calcined wallboard. The deeper the calcination into the wallboard the greater the total amount of fire exposure (heat flux and duration).

6.13 Window Glass. Many texts have related fire growth history or fuels present to the type of cracking and deposits that resulted on window glass. There are several variables that affect the condition of glass after fire, which include the type and thickness of glass, rate of heating, degree of insulation to the edges of the glass provided by the glazing method, degree of restraint provided by the window frame, history of the flame contact, and cooling history.

6.14* Collapsed Furniture Springs. The collapse of furniture springs may provide the investigator with various clues concerning the direction, duration, or intensity of the fire. However, the collapse of the springs cannot be used to indicate exposure to a specific type of heat source or ignition, such as smoldering ignition or the presence of an ignitable liquid. The results of laboratory testing indicate that the annealed springs, and the associated loss of tension (tensile

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strength), is a function of the application of heat. These tests reveal that short-term heating at high temperatures and long-term heating at moderate temperatures over 400°C (750°F) can result in the loss of tensile strength and in the collapse of the springs. Tests also reveal that the presence of a load or weight on the springs while they are being heated increases the loss of tension.

6.15 Locations of Objects. Certain types of patterns can be used to locate the positions of objects as they were during a fire.

6.15.1 Heat Shadowing. Heat shadowing results from an object blocking the travel of radiated heat, convected heat, or direct flame contact from its source to the material on which the pattern is produced. Conducted heat, however, does not produce heat shadowing.

6.15.2 Protected Areas. Closely related in appearance to the resulting pattern of heat shadowing is a protected area. A protected area results from an object preventing the products of combustion from depositing on the material that the object protects, or prevents the protected material from burning.

6.16 Locations of Patterns.

6.16.1 General. Fire patterns may be found on any surface that has been exposed to the effects of the fire or its by-products. These surfaces include interior surfaces, external surfaces and structural members, and outside exposures surrounding the fire scene.

6.17* Pattern Geometry.

6.17.1 General.

6.17.1.1 Various patterns having distinctive geometry or shape are created by the effects of fire and smoke exposure on building materials and contents. In order to identify them for discussion and analysis, they have been described in the field by terms that are indicative of their shapes. While these terms generally do not relate to the manner in which the pattern was formed, the descriptive nature of the terminology makes the patterns easy to recognize. The discussion that follows will refer to patterns by their common names and provide some information about how they were formed and their interpretation. Additional information can be found in Section 6.2.

6.17.3 Inverted Cone Patterns. Inverted cones are commonly caused by the vertical flame plumes of the burning volatile fuels not reaching the ceiling.

6.17.4 Hourglass Patterns. The plume of hot gases above a fire is composed of a hot gas zone shaped like a V and a flame zone at its base. The flame zone is shaped like an inverted V. When the hot gas zone is truncated by a vertical plane surface, the typical V pattern is formed. If the fire itself is very close to or in contact with the vertical surface, the resulting pattern will show the effects of both the hot gas zone and the flame zone together as a large V above an inverted V. The inverted V is generally smaller and may exhibit more intense burning or clean burn. The overall pattern that results is called an *hourglass. (See 6.2.2.)*

6.17.5 U-shaped Patterns. U patterns are similar to the more sharply angled V patterns but display gently curved lines of demarcation and curved rather than angled lower vertices. *(See Figure 6.17.5.)* U-shaped patterns are created by the effects of radiant heat energy on the vertical surfaces more distant from the same heat source than surfaces displaying sharp V patterns. The

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lowest lines of demarcation of the U patterns are generally higher than the lowest lines of demarcation of corresponding V patterns that are closer to the fire source.

6.17.6 Truncated Cone Patterns. Truncated cone patterns, also called truncated plumes, are three-dimensional fire patterns displayed on both horizontal and vertical surfaces. *(See Figure 6.17.6.)* It is the interception or truncating of the natural cone-shaped or hourglass-shaped effects of the fire plume by these vertical and horizontal surfaces that causes the patterns to be displayed. Many fire movement patterns, such as V patterns, U patterns, circular patterns, and "pointer or arrow" patterns, are related directly to the three-dimensional "cone" effect of the heat energy created by a fire.

6.17.8 Circular Shaped Patterns. Patterns that are generally circular in shape are common at fire scenes. These patterns are never truly circular unless they represent areas that have been protected from burning by circular items, such as waste-baskets or the bottoms of furniture items.

6.17.8.2 Irregular Patterns. Irregular, curved, or "pool-shaped" patterns on floors and floor coverings should not be identified as resulting from ignitable liquids on the basis of observation of the shape alone. In cases of full room involvement, patterns similar in appearance to ignitable liquid burn patterns can be produced when no ignitable liquid is present.

6.17.10 Commercial Fuel Gas Patterns. The burning of the common commercial fuel gases, natural gas and liquefied petroleum (LP) gases, can provide distinctive fire patterns. Distinctive localised burning between ceiling joists, between interior vertical wall studs, and in the corners of ceilings of rooms is quite common and a good indicator of the presence of natural gas.

6.17.10.1 Natural gas has a vapor density of 0.65; therefore, it is lighter than air and will rise when released. This property of natural gas will create gas pockets in the upper areas of rooms and structures.

6.17.10.2 The LP-Gases, being heavier than air (with vapor densities of about 1.5 for propane and 2.0 for butane), also tend to pocket within a structure, though at low levels. However, the buoyant nature of their products of combustion when ignited prevents them from producing similar pocketing burn patterns as natural gas.

6.17.11 Saddle Burns. *Saddle burns* are distinctive U- or saddle-shaped patterns that are sometimes found on the top edges of floor joists. They are caused by fire burning downward through the floor above the affected joist. Saddle burns display deep charring, and the fire patterns are highly localized and gently curved. These patterns are often created by the burning of liquid fuels, (not necessarily ignitable liquids). They also may be created by radiant heat from a burning material in close proximity to the floor (e.g., sofa). Ventilation caused by floor openings may also contribute to the development of these patterns, shown in Figure 6.17.11.

6.18 Linear Patterns. Patterns that have overall linear or elongated shapes can be called linear patterns. They usually appear on horizontal surfaces.

6.18.1 Trailers. In many incendiary fires, when fuels are intentionally distributed or "trailed" from one area to another, the elongated patterns may be visible. Such fire patterns, known as *trailers*, can be found along floors to connect separate fire sets, or up stairways to move fires from one floor or level within a structure to another, as shown in Figure 6.18.1. Fuels used for trailers may be ignitable liquids, solids, or combinations of these.

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6.19 Area Patterns. Some patterns may appear to cover entire rooms or large areas without any readily identifiable sources or beginnings. These patterns are most often formed when the fuels that create them are widely dispersed before ignition, or when the movement of the fire through the areas is very rapid, as in a flash fire.

6.19.1 Flashover & Full Room Involvement. In the course of a flashover transition, fire spreads rapidly to all exposed combustible materials as the fire progresses to full room involvement. *(See 5.5.4.2.)* This process can produce relatively uniform depths of char or calcinations on vertical surfaces. If the fire is terminated before full room involvement, relatively uniform burning can be evident on vertical surfaces above the bottom of the hot layer. When the fire has progressed to full room involvement, the area pattern may be uneven and may extend to the base of the wall. The uniformity described in this section may not be consistent throughout the room or space. Some exposed surfaces may have little or no damage due to the ventilation effects or the locations of furnishings or fixtures that may prevent charring, darkening or discoloration of wall and ceiling surfaces.

6.20 Material Distortion. Patterns can be seen in the physical change of shape and distortion of some objects that are subjected to the heat of the fire.

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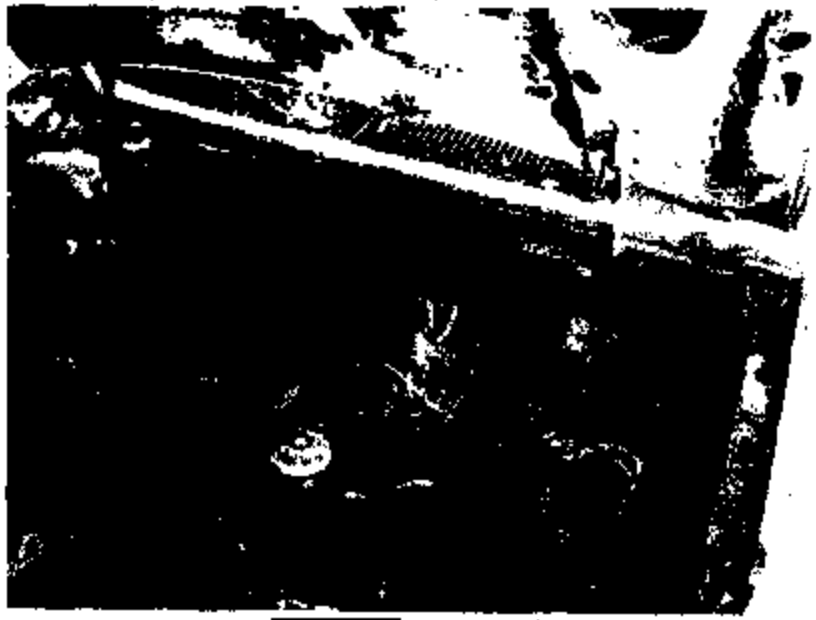

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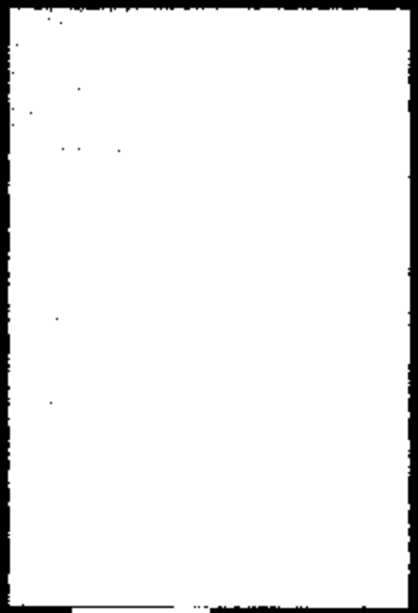

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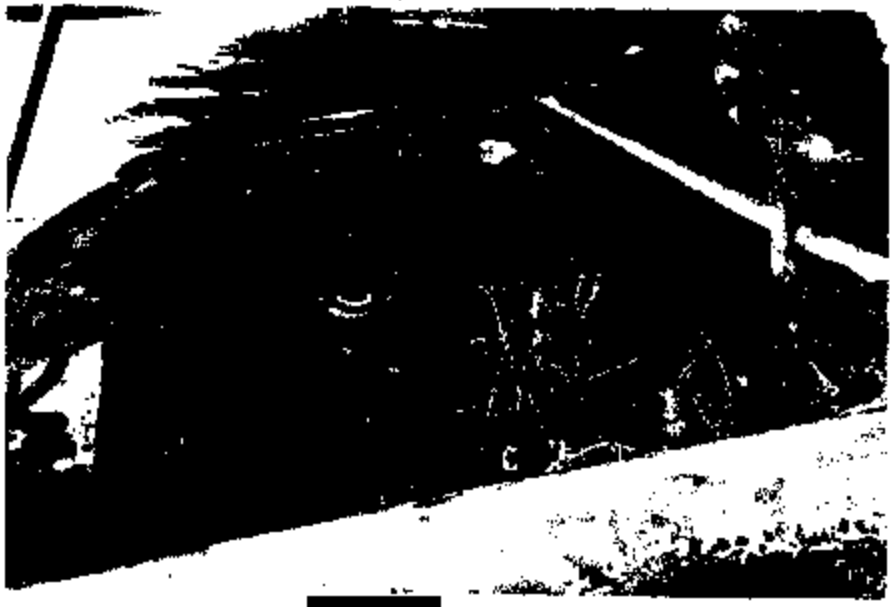

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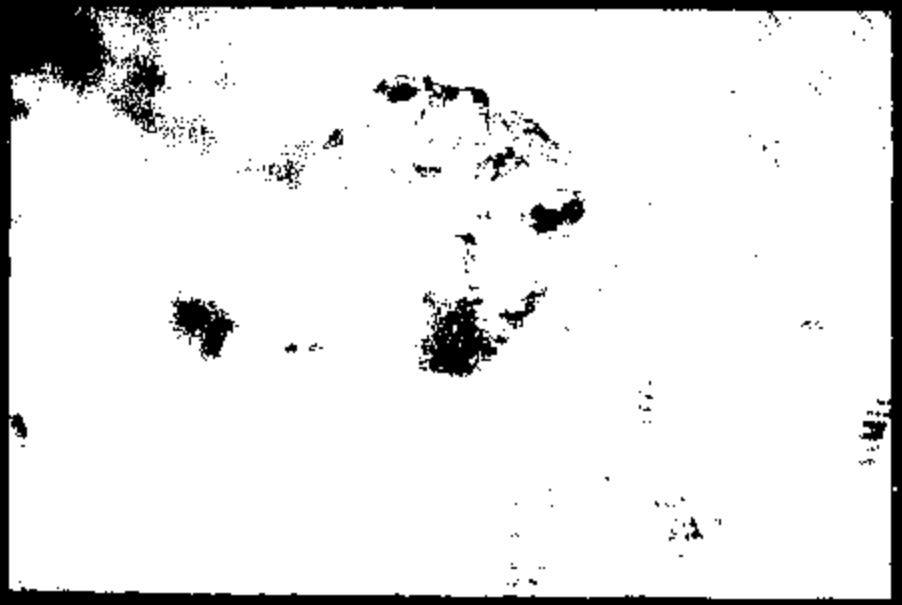

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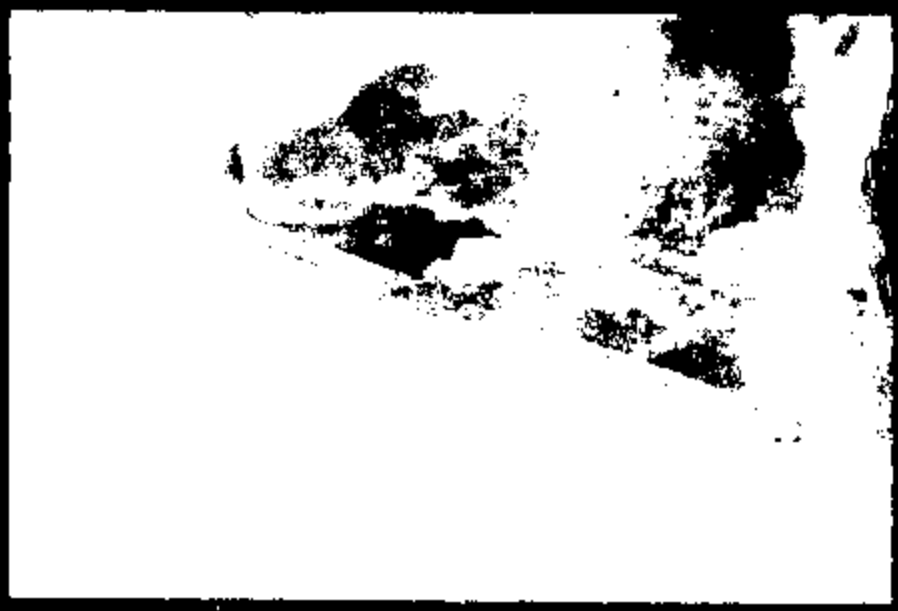

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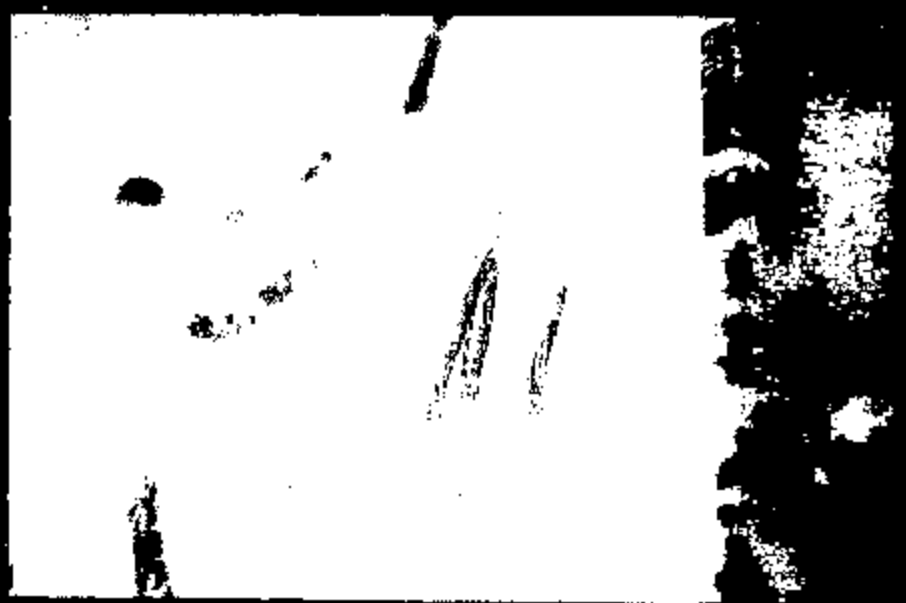

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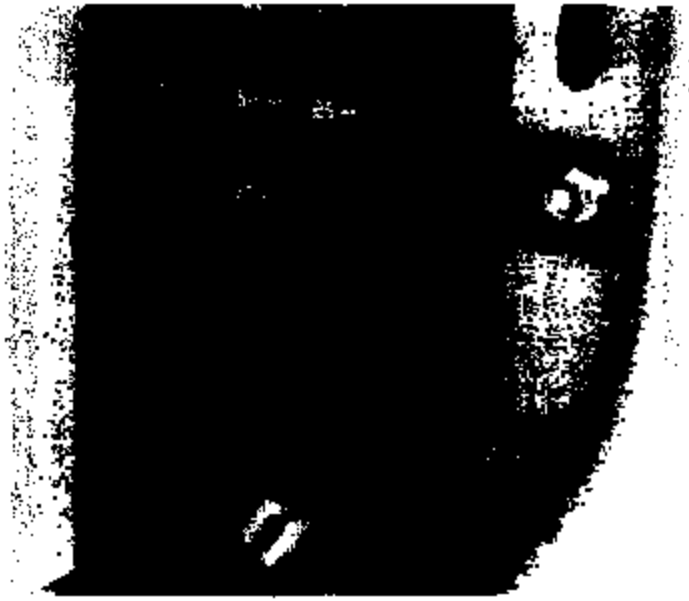

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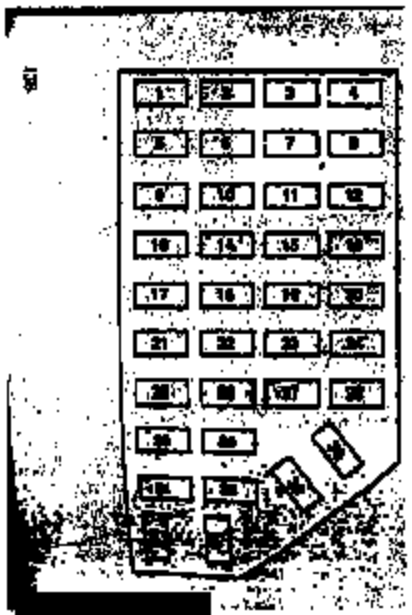

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Fuse/Relay Location	Fuse Amp Rating	Description
1	7.5A	Power Mirror Switch, Power Antenna
2	7.5A	Blower Motor Relay, Air Bag Diagnostic Monitor
3	7.5A	Left Stop/Turn Trailer Tow Connector
4	10A	Left Headlamp
5	10A	Data Link Connector (DLC)
6	7.5A	Rear Blower Motor (Without EATC)
7	7.5A	Right Stop/Turn Trailer Tow Connector
8	10A	Right Headlamp, Foglamp Relay
9	7.5A	Brake Pedal Position Switch
10	7.5A	Speed Control/Amplifier Assembly, Brake Pressure Switch, Generic electronic Module (GEM), Shift Lock Actuator, Blend Door Actuator, A/C - Heater Assembly, Shifter
11	7.5A	Instrument Cluster
12	7.5A	Power Window Relay, Washer Pump

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		Pressure Switch, Generic electronic Module (GEM), Shift Lock Actuator, Blend Door Actuator, A/C - Heater Assembly, Flasher
11	7.5A	Instrument Cluster
12	7.5A	Power Window Relay, Washer Pump Relay
13	20A	Brake Pedal Position Switch, Brake Pressure Switch
14	10A	4 Wheel Anti-Lock Brake System (4WABS) Module, 4WABS Main Relay
15	7.5A	Instrument Cluster
16	30A	Windshield Wiper Motor, Wiper Hi-Lo Relay, Wiper Run/Park Relay
17	25A	Cigar Lighter
18	25A	Drivers Unlock Relay, All Unlock Relay, All Lock Relay
19	25A	PCM Power Diode
20	7.5A	RAP Module, Generic Electronic Module

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	10A	4 Wheel Anti-Lock Brake System (4WABS) Module, 4WABS Main Relay
15	7.5A	Instrument Cluster
16	30A	Windshield Wiper Motor, Wiper Hi-Lo Relay, Wiper Run/Park Relay
17	25A	Cigar Lighter
18	25A	Drivers Unlock Relay, All Unlock Relay, All Lock Relay
19	[redacted]	PCM Power Diode
20	[redacted]	RAP Module, Generic Electronic Module (GEM), Radio, Cellular Phone

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Fuse/Relay Location	Fuse Amp Rating	[redacted]
21	15A	Flasher (Hazard)
22	20A	Auxiliary Heater
23	-	NOT USED
24	7.5A	Clutch Pedal Position (CPP) Switch, Starter Interrupt Relay, Anti-Theft
25	7.5A	Generic Electronic Module (GEM), Instrument Cluster, Secure Lock
26	10A	Battery Saver Relay, Electronic Shift Relay, Interior Lamp Relay, Power Window Relay, Electronic Shift Control Module
27	15A	DRL, Backup Lamps Switch, DTR Sensor, GEM, Electric Shift
28	7.5A	Generic Electronic Module (GEM), Radio, Memory Seat
29	25A	Radio

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		Relay, Interior Lamp Relay, Power Window Relay, Electronic Shift Control Module
27	15A	DRL, Backup Lamps Switch, DTR Sensor, GEM, Electric Shift
28	7.5A	Generic Electronic Module (GEM), Radio, Memory Seat
29	25A	Radio
30	15A	Park Lamp/Trailer Tow Relay
31	-	NOT USED
32	10A	Heated Mirror
33	15A	Headlamps, Daytime Running Lamps (DRL) Module, Instrument Cluster
34	7.5A	Rear Integrated Control Panel, CD
35	7.5A	Rear Blower Motor (With EATC)
36	7.5A	EATC Memory, CD, Rear Integrated Control Panel, Memory Seat, Message Center

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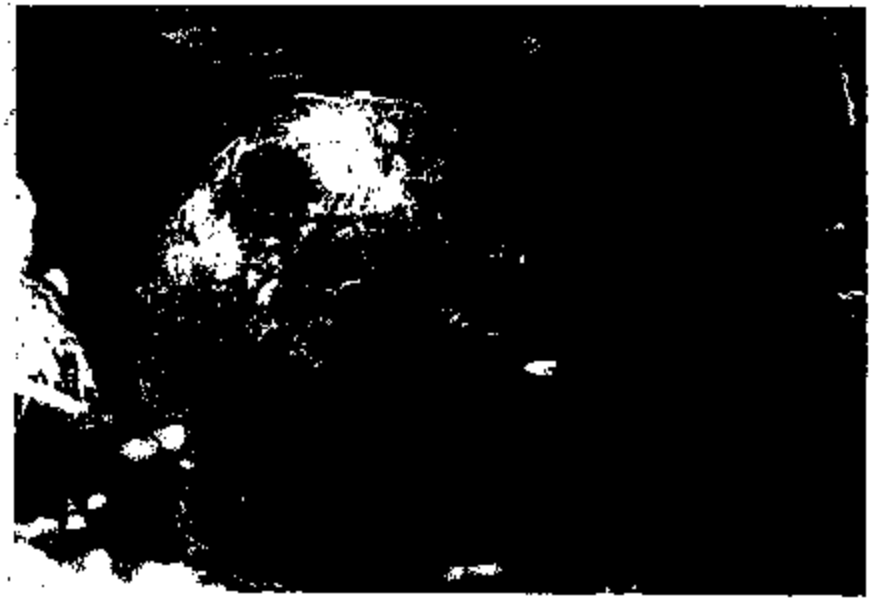

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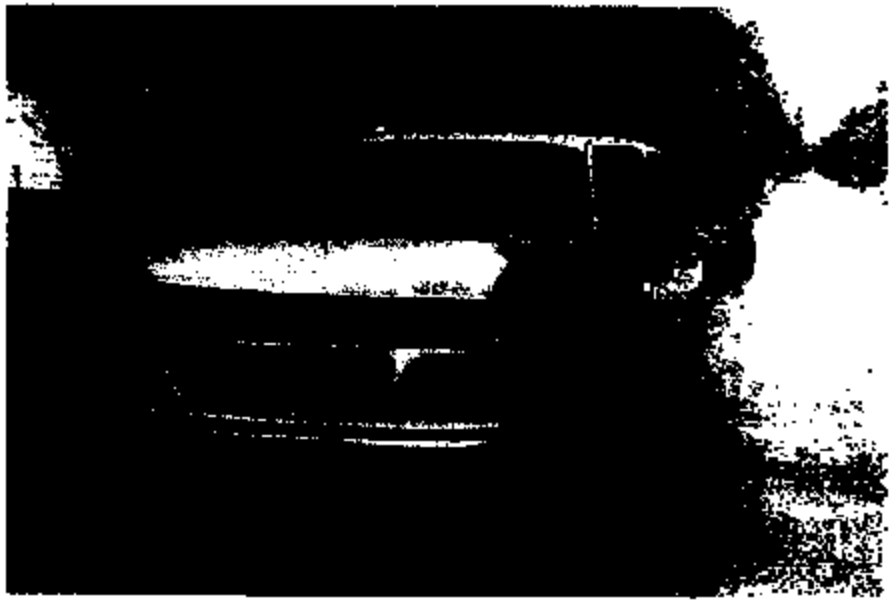

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