

HOUSTON FIRE DEPARTMENT

Southwest Inn Recovery Committee Report Overview

Public Safety Sub-Committee

September 23, 2014

GOALS & OBJECTIVES

- ✘ Describe the process used by the internal HFD Recovery Committee
- ✘ Provide factual information regarding the events of May 31, 2014
- ✘ Discuss actions taken by HFD following May 31st
- ✘ Discuss future actions

RECOVERY COMMITTEE ORGANIZATION

CHAIRMAN
Ed Llewellyn

SUBJECT MATTER EXPERTS

ADVISORY BOARD

Terry Garrison
Richard Mann
Mike Casey
Rodney West

OPERATIONS GROUP

Ronnie Martin
Mike Phillips
Jimmy Campbell
Roland Hobbs
Celeste Fatheree

RESCUE & SAFETY GROUP

Troy Koteras
Curtis Williams
Don Alexander
Wesley Hurst
Ken Wright

**COMMUNICATIONS &
TECHNOLOGY GROUP**

Jeff Cook
Valerie Seymour
Brad Hawthorne
Eddie Havlice
John Franco

**TIMELINE / PROCESS /
PROCEDURE**

Chris Chavez
Kevin Alexander
Julie Higgins
Robert Carnes
Trevin Nelms

RECOVERY COMMITTEE DIRECTIVES:

- ✘ Establish facts pertaining to SW Frwy fire
- ✘ Identify contributing factors to SW Frwy fire tragedy
- ✘ Identify commonalities between the SW Frwy fire and other LODD's and near misses
- ✘ Identify opportunities for improvement based on SW Frwy fire and other LODD / near-misses at the strategic, tactical, task level
- ✘ Outline opportunities for improvement into specific categories:
 1. Operations
 2. Training
 3. Equipment
 4. Administrative

RECOVERY COMMITTEE TIMELINE

- ✘ June 2013
 - ✘ 25 members selected representing all ranks of the department
- ✘ July 2013
 - ✘ First full committee meeting to establish overall goals & objectives
 - ✘ Members organized into four specific workgroups with specific areas of responsibility established
- ✘ July / August 2013
 - ✘ Workgroup research conducted
- ✘ September 2013
 - ✘ 1st Workshop (Full committee meeting)
 - ✘ Workgroups presented initial findings of their research
- ✘ October / November 2013
 - ✘ Workgroups developed specific recommendations based on research and data into Strategic, Tactical, Task level
- ✘ December 2013
 - ✘ 2nd Workshop (Full committee meeting)
 - ✘ Workgroups presented draft of recommendations

RECOVERY COMMITTEE TIMELINE (CONTINUED)

× January 2014

- × 1st Draft report completed for editing (1000 plus hours)

× May 2014

- × 2nd Draft report completed for editing

× July 2014

- × Final report completed
- × July 9th – Line of Duty Death of FF Daniel Grover

× August 2014

- × Final report provided to Mayor
- × August 6th – Meeting with families and LODD crews to discuss findings of Recovery Committee

× September 2014

- × District Level training being conducted to all members of the department
- × Sept. 2nd - Press Conf. due to Public Release- Council Members
- × Sept. 23rd - Public Safety Sub-Committee presentation



Houston Fire Department

***Southwest Inn Recovery Committee
Final Report and Recommendations
September 1, 2014***

**Southwest Inn Hotel Fire
6855 Southwest Freeway
May 31, 2013
Incident Number 1305310305**

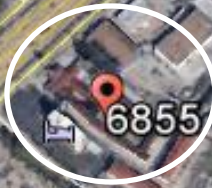
The Beginning.....

***Conditions at the Time
of Alarm***

CONDITIONS AT THE TIME OF ALARM

Weather

- Temperature: 86 F. degrees
- Heat Index: 93F. Degrees
- Wind Speed: **16 mph**
- Gust speed: **23 mph**
- Wind direction was from the **South**

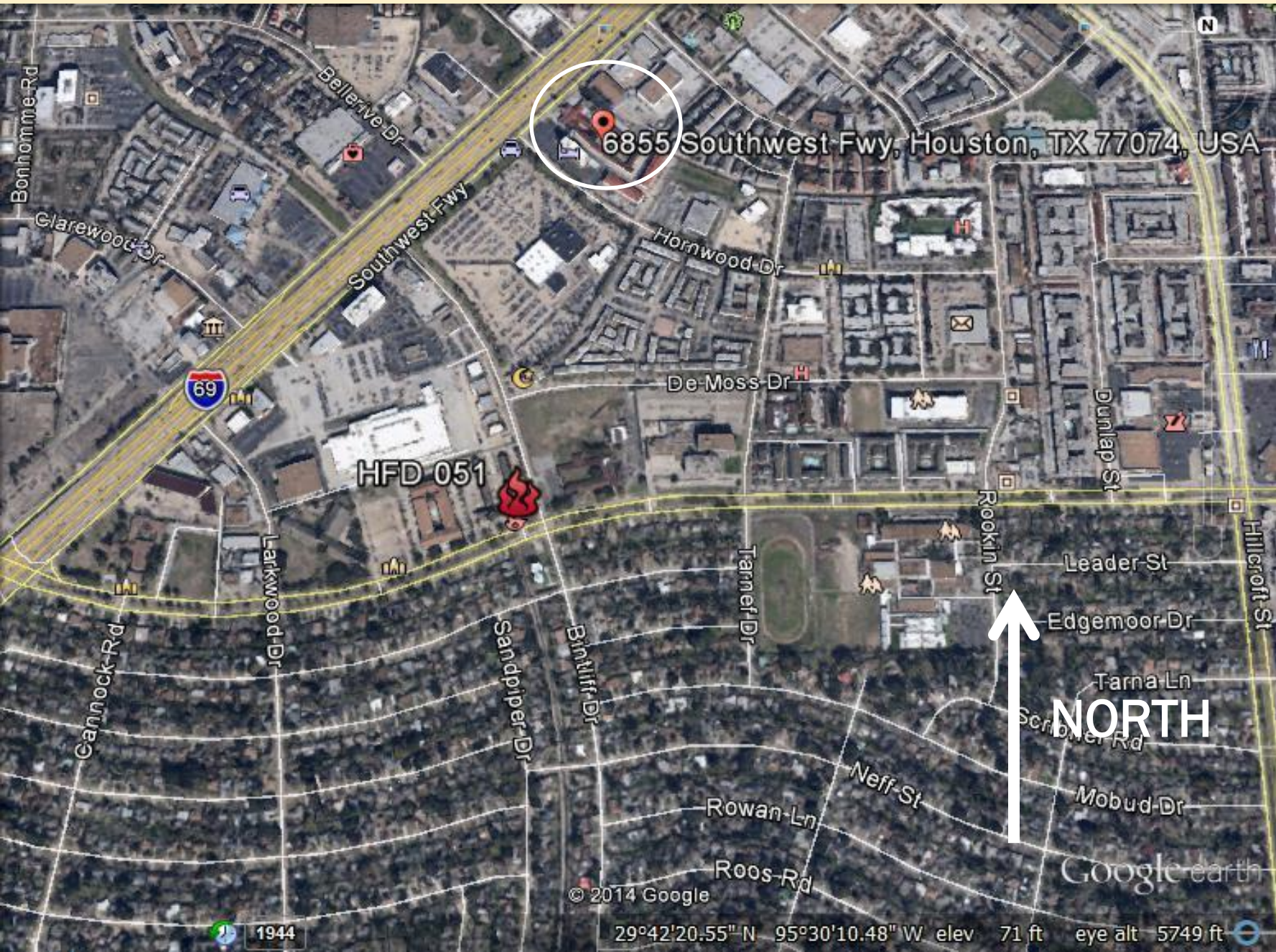


6855 Southwest Fwy, Houston, TX 77074, USA

HFD 051

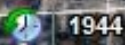


NORTH



© 2014 Google

29°42'20.55" N 95°30'10.48" W elev 71 ft eye alt 5749 ft



Google earth

CONDITIONS AT THE TIME OF ALARM

12:05:19

This was the time of the first call made to the City of Houston 9-1-1 call Center

17 calls were made to 9-1-1 reporting this fire

Note: First call was an employee of the restaurant

CONDITIONS AT THE TIME OF ALARM

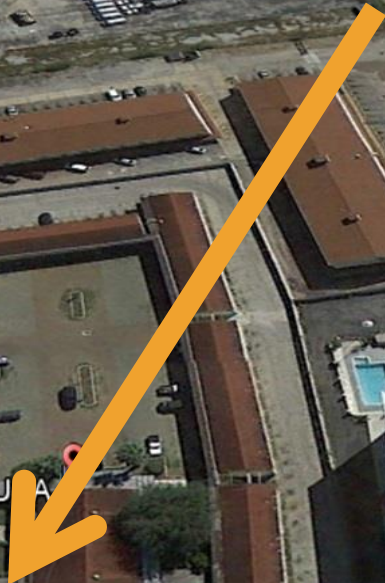
Sustained Wind

South at 16 mph

WIND contributed to spread and increase of fire.

10/2012

South



6855 Southwest Fwy, Houston, TX-77074, U A

Intake Side

Exhaust Side





Division Charlie

Division Bravo

Division Delta

Division Alpha

CONDITIONS AT THE TIME OF ALARM

Smoke



CONDITIONS AT THE TIME OF ALARM

Traffic



***Occupancy
and
Building Construction***

OCCUPANCY TYPE

1. The Primary use of the property was a **Hotel**
2. There was a **Restaurant and Banquet facility** (**Bhojan Restaurant**) that occupied the front left and center portion of the main building.

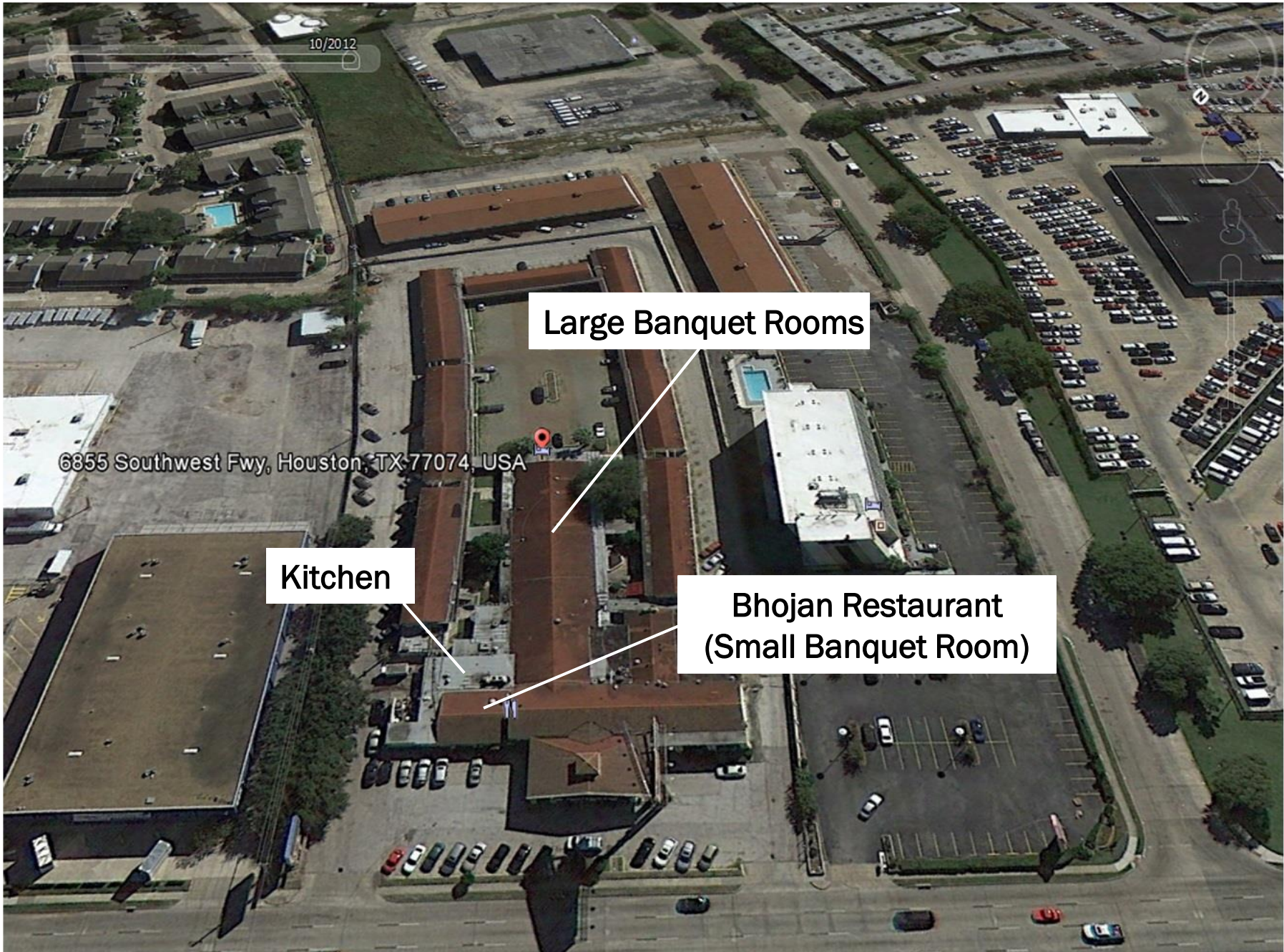
10/2012

6855 Southwest Fwy, Houston, TX-77074, USA

Large Banquet Rooms

Kitchen

Bhojan Restaurant
(Small Banquet Room)



BUILDING CONSTRUCTION

1. Age of the Building (**Began in 1966**)
2. Construction Type (**Type V – Wood Frame**)
3. Two different Roof Systems that covered the Small Banquet room and Kitchen
 - **Lightweight Wood-truss** over the Small Banquet room
 - **Flat roof** over the Kitchen

10/2012

6855 Southwest Fwy, Houston, TX-77074, USA

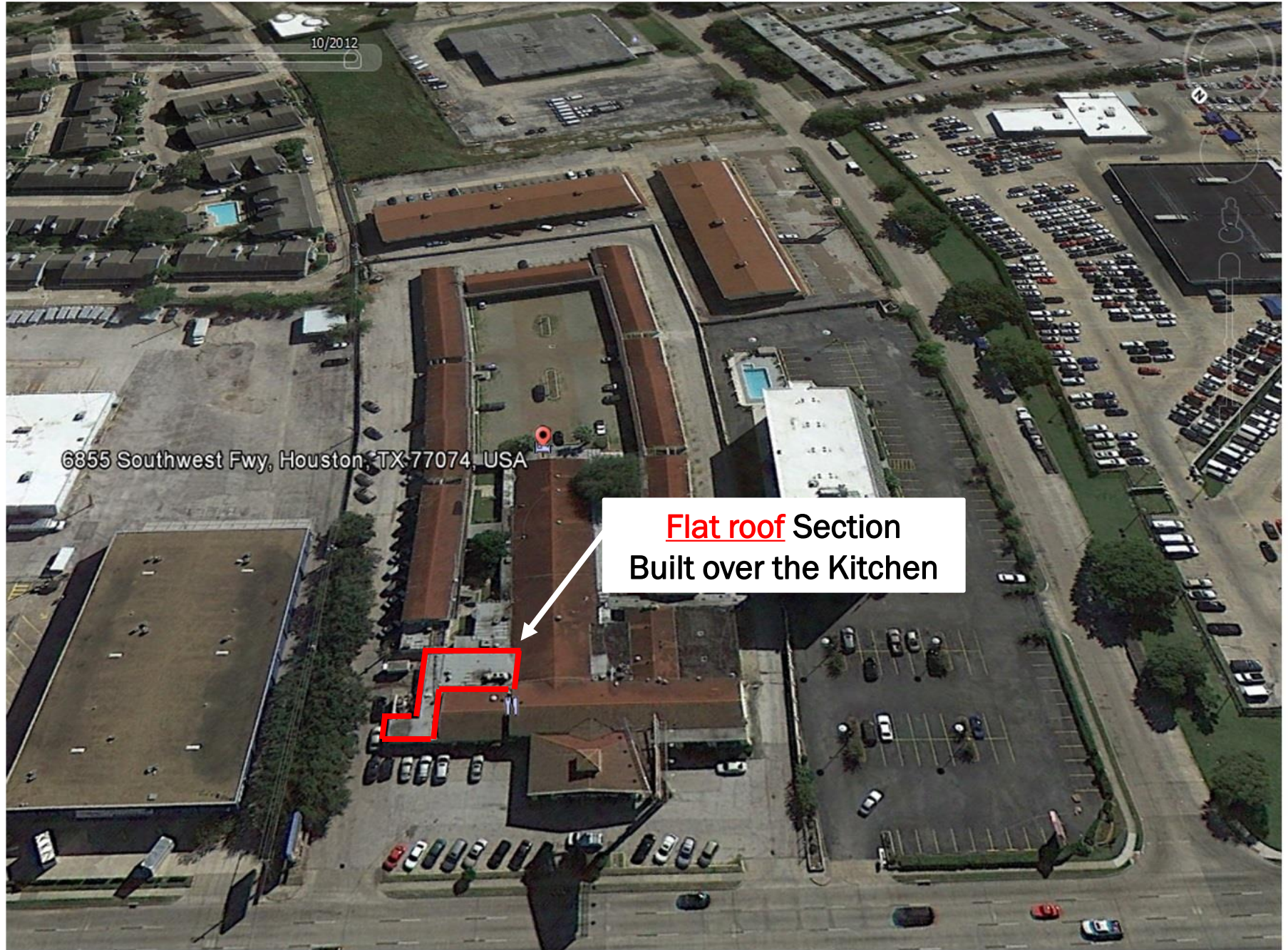
Truss roof Section built over the
Small Banquet Room and a
portion of the Kitchen



10/2012

6855 Southwest Fwy, Houston, TX-77074, USA

Flat roof Section
Built over the Kitchen



Timeline

Dispatch to MAYDAY

12:05:19

**First 9-1-1 Call reported to the Houston
Emergency Communication Center (HEC)**

12:07:55

**OEC dispatched the following on
DISPCW - [Tone]“*Restaurant Fast Food on
fire – D068, D028, E051, E068, E060, E082,
L068, L069, SF057 M010 Southwest Freeway
In-Bound near Sandspoint Dr. Key Map 530H
Hotel, Alpha – Bravo 10.*”**

12:08:24

Engine 51 goes en-route from the Station

12:11:25

**E051 arrives on location and provides the following
report;“*E051 on location, we got a one story
restaurant, we got heavy smoke showing from the
attic of the restaurant, we’ll be going in making an
offensive attack, we’ll be pulling a 2 ½.*”**

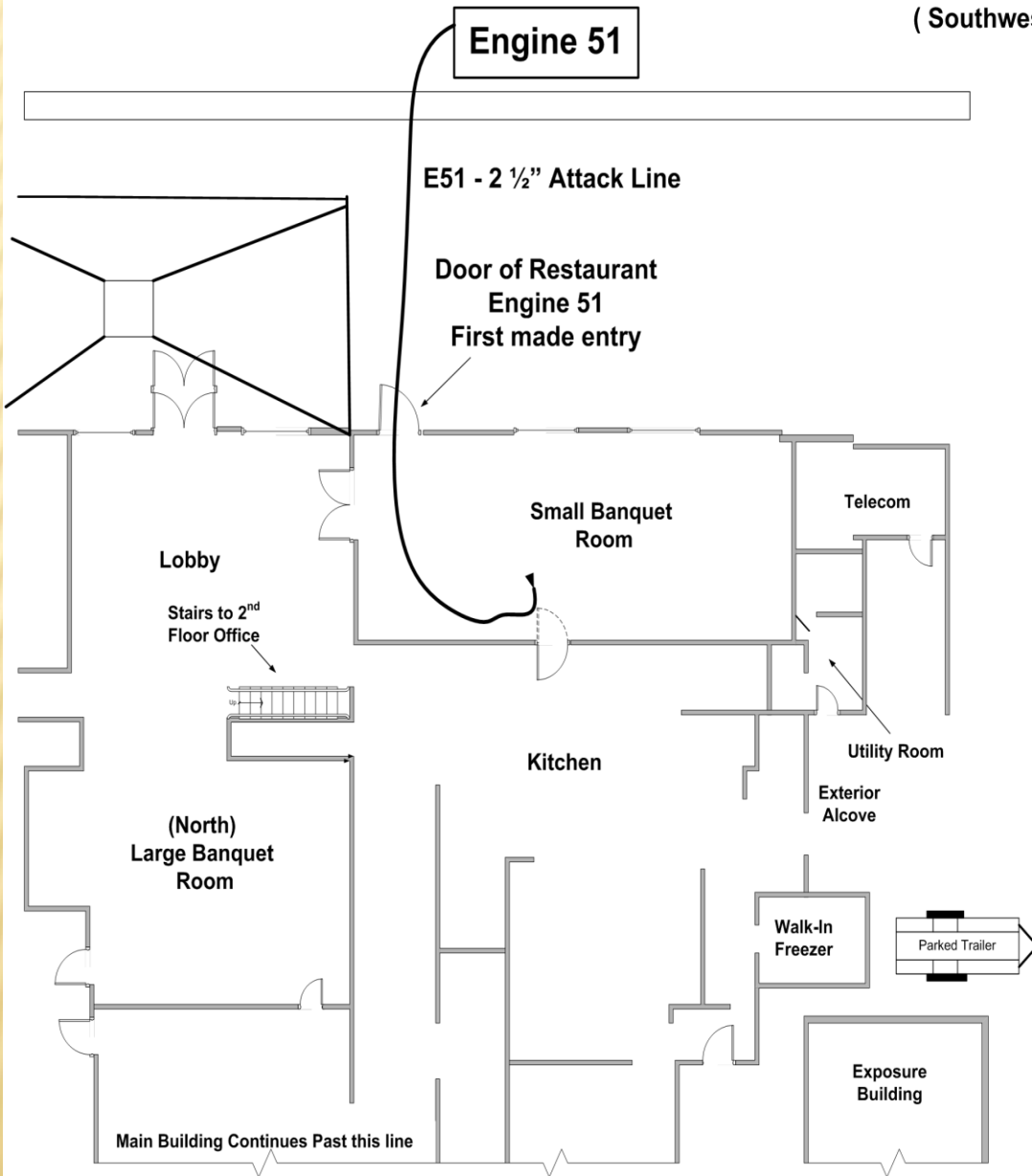
(North Bound U.S Highway 59)

Engine 51

(Southwest Freeway North bound feeder)

E51 - 2 1/2" Attack Line

Door of Restaurant
Engine 51
First made entry



Moving
and
Storage Facility



Southwest Inn Hotel

6855 Southwest Freeway

Houston, Texas

Houston Fire Department - Emergency Operations

12:13:21

D068 arrives on location and establishes
“Southwest Freeway Command”.

12:15:17

E051 begins making entry and reports a Thermal Image Camera (TIC) reading of **184 degrees** at the door before entering the structure.

12:18:38

Command [D068] contacts OEC and requests a 2-11 be dispatched.

12:18:43

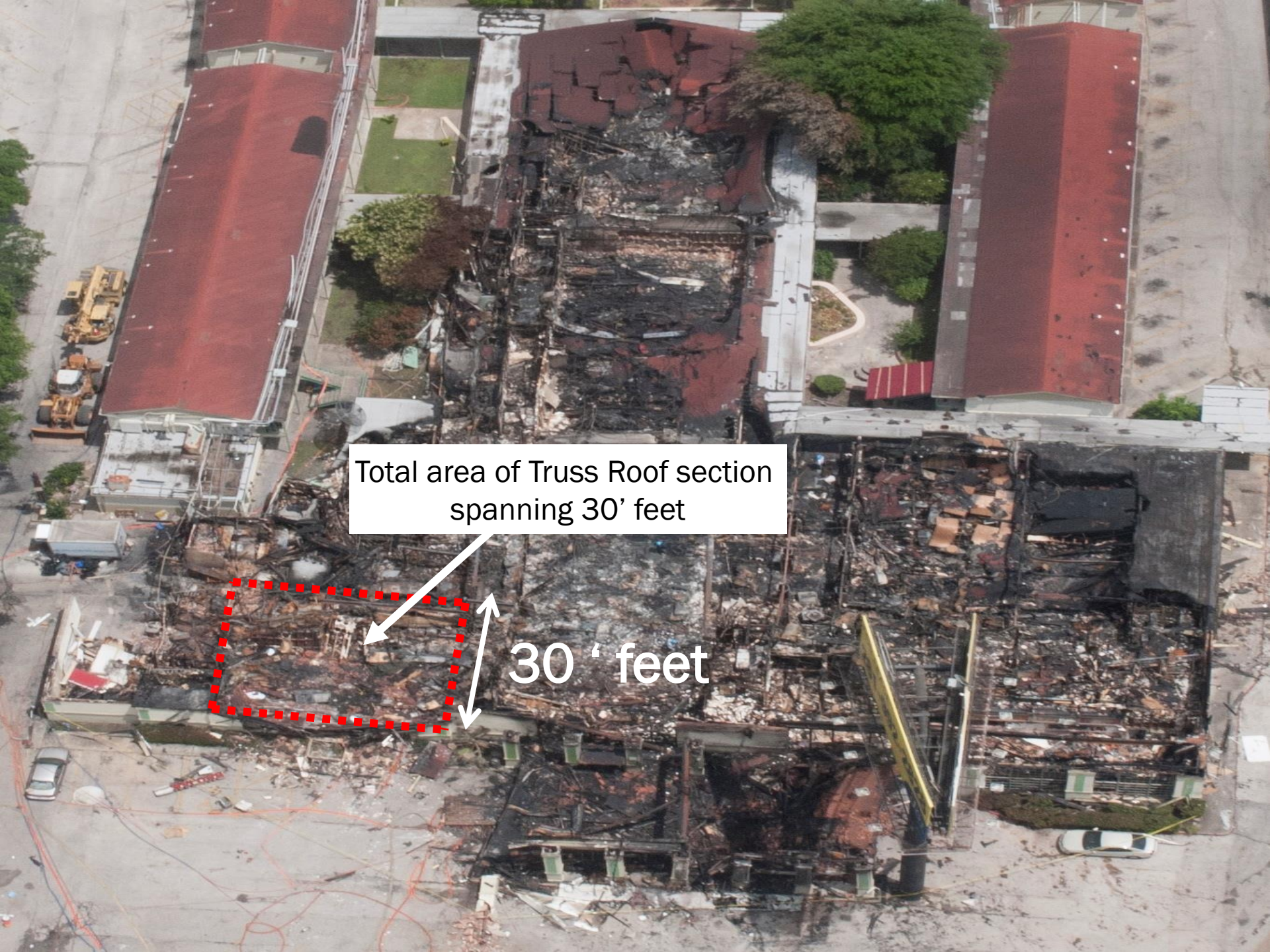
The Attack Engine [E051D] calls E051 to report that the **Engine only has a quarter of a tank** of water remaining and that there is not a positive water supply established yet.

- 12:18:52** Command [D068] calls E051 and gives the following order *“Command to E051, back your line out, you do not have a water supply yet, you’re still on tank water.”*
- 12:19:58** The Attack Engine [E051D] calls E051 to report that a water supply has now been established.
- 12:20:07** E051 contacts Command [D068] to report that E051 will be going back into the building.
- 12:20:23** Command [D068] orders E068 to join E051 and assist with the fire attack
- 12:23:26** E082 reports *“E082 MAYDAY..... MAYDAY....”*



“15 minutes and 29 seconds”

**This is the amount of
time it took to go from
Dispatch to MAYDAY**



Total area of Truss Roof section
spanning 30' feet



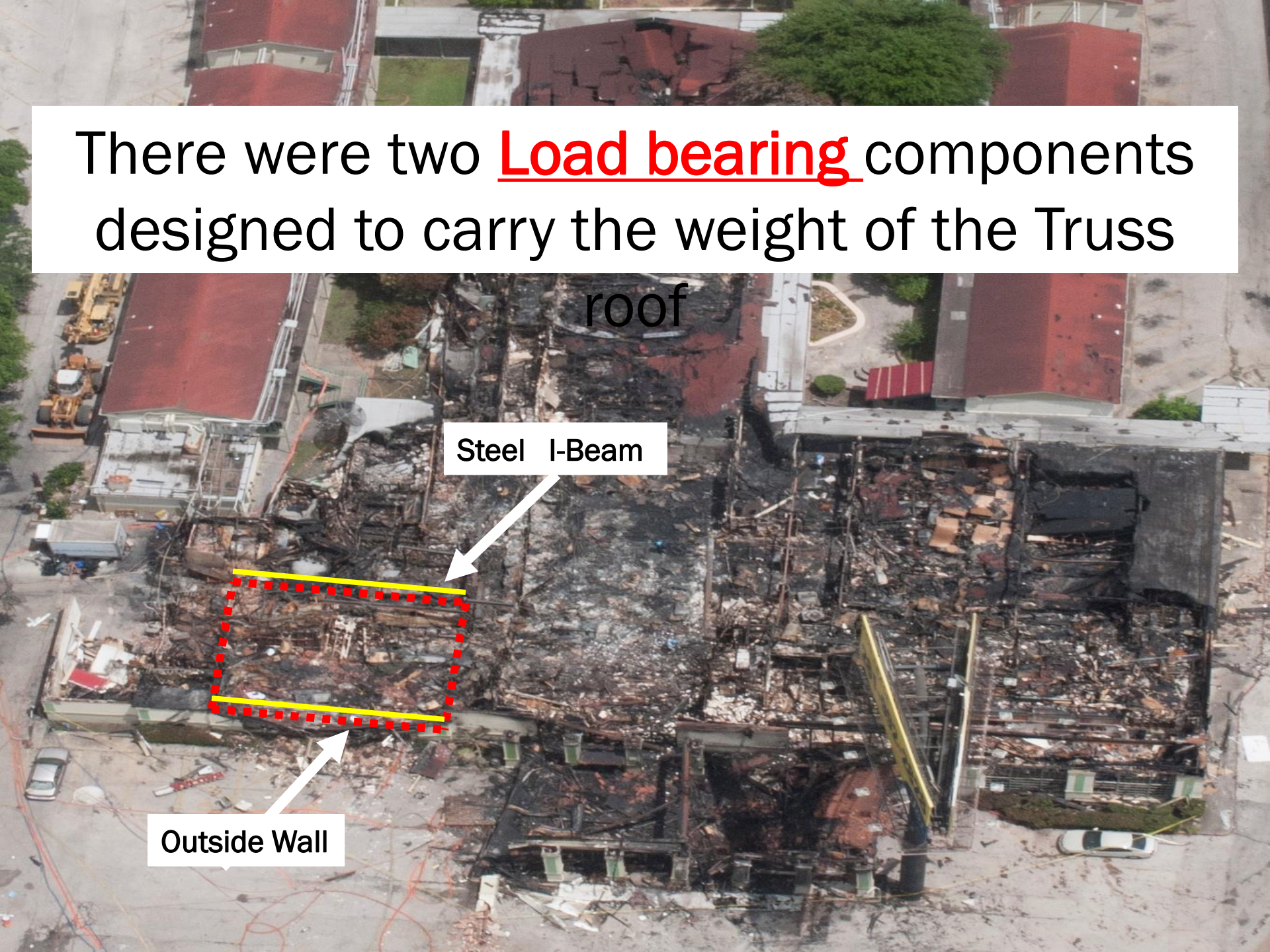
30 ' feet

There were two Load bearing components designed to carry the weight of the Truss

roof

Steel I-Beam

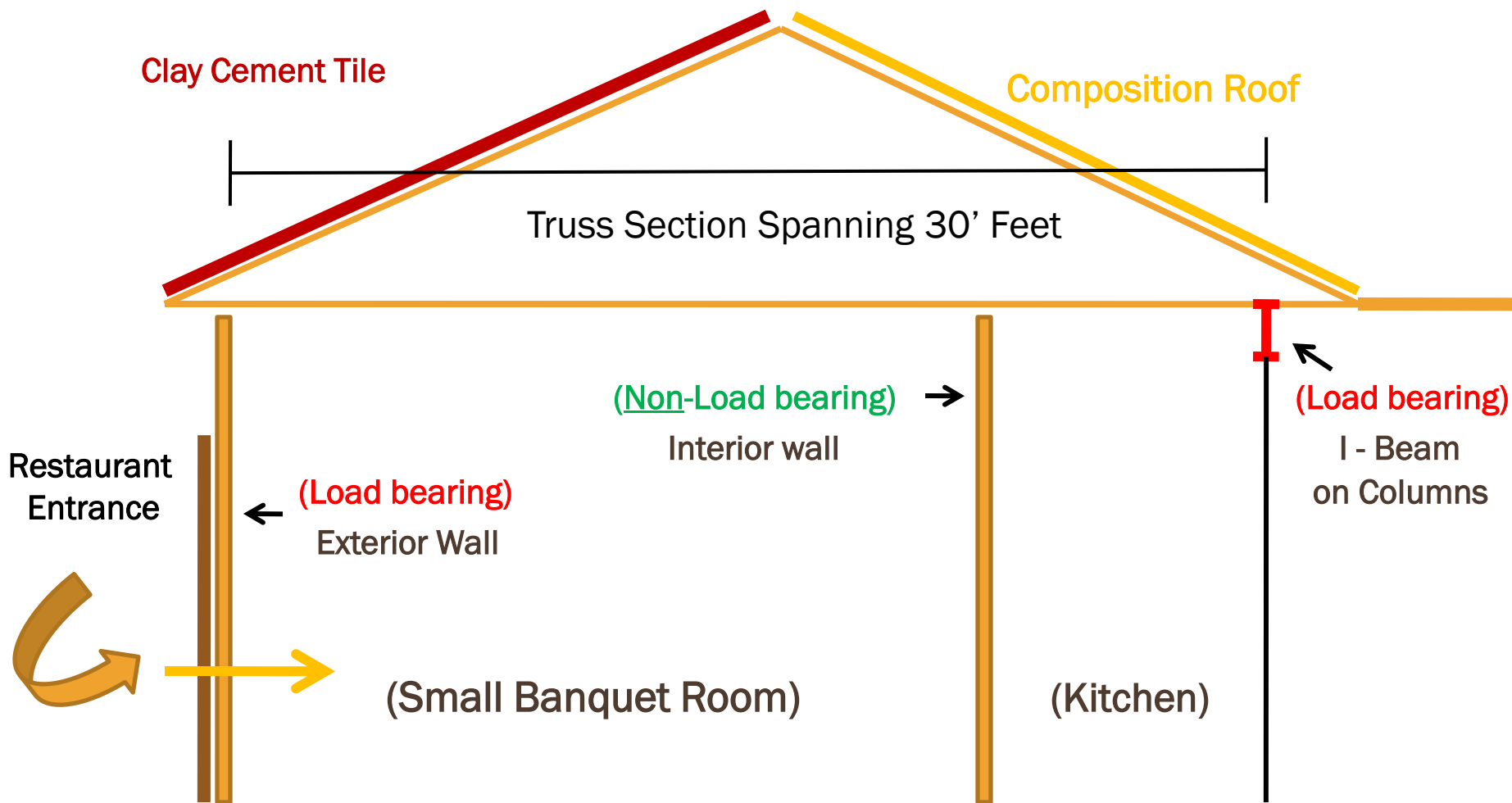
Outside Wall





Non-Load bearing
Interior wall

LOAD BEARING COMPONENTS DESIGNED TO CARRY THE WEIGHT OF THE TRUSS ROOF

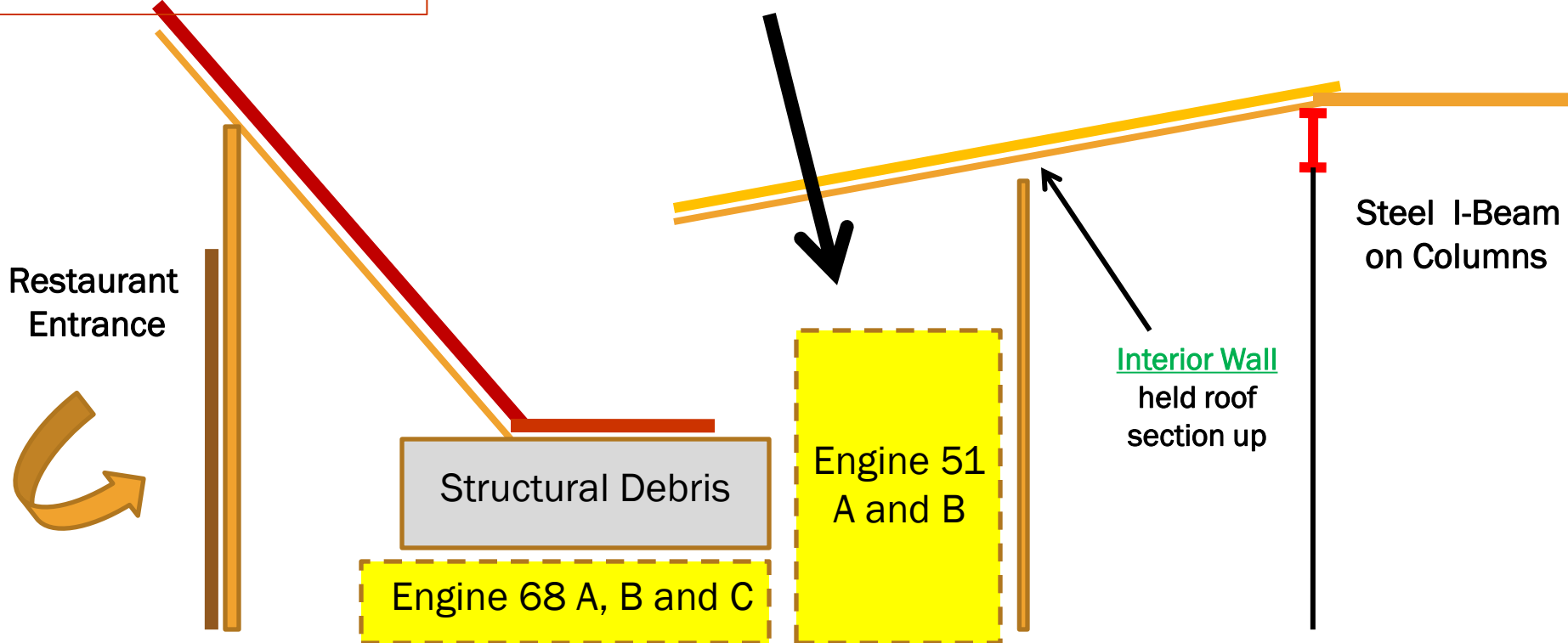


INTERIOR WALL CREATED A VOID AREA

Truss side with weight from **Clay Cement Tile**
“**Catastrophic Collapse**”

Truss side with weight from **Composition Shingles**
“Layed Down”

Void Space



Restaurant Entrance

Structural Debris

Engine 68 A, B and C

Engine 51
A and B

Interior Wall
held roof
section up

Steel I-Beam
on Columns

Engine 51

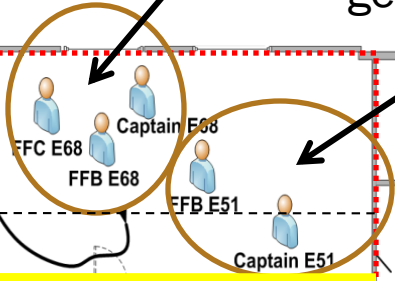
Engine 68



E51 - 2 1/2" Attack Line

E68 Under Roof and Debris

Void allowed E51 to get on Top of the roof



Moving and Storage Facility

Lobby

Stairs to 2nd Floor Office

Telecom

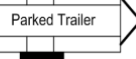
Kitchen

Utility Room

Exterior Alcove

(North) Large Banquet Room

Walk-In Freezer



Exposure Building

Main Building Continues Past this line



Southwest Inn Hotel

6855 Southwest Freeway
Houston, Texas

Houston Fire Department - Emergency Operations

AT FIRST, THERE WERE A LOT OF **THEORIES**

Some of the most common were.....

1. A **Truss roof with clay tile** was added on top of a pre-existing **flat roof**
No - Maintenance staff state the truss had an **Attic / Crawl space** and no flat roof
2. The **Truss roof structure** was **overloaded** due to the weight of the clay tile
No - A third party engineering firm reported that the most stressed member of the Truss structure was the **Top chord** at **66.5%** of it's load carrying capacity.
3. There was **Termite** and **Water damage** that lead to early collapse
Yes - There was **Termite** damage but it was in the **lower portions of the wall studs**
Yes - There was **Water damage** but it was **located in the flat roof section** east of the collapse area

STRUCTURAL ANALYSIS

The Houston Arson Bureau
used three (3) sources
to assist with the
structural analysis

CITY OF HOUSTON PUBLIC WORKS AND ENGINEERING (BUILDING PERMIT DEPARTMENT)

Provided historical data for the property

Age of the Building (1966)

Construction Type (Type V – Wood Frame)

Most recent renovation Permits (1998)

Copies of [Fire Marshal Inspections](#)

TEXAS COMMISSION ON FIRE PROTECTION (TCFP)

Reviewed Building Permits

Provided Drawings

Interviewed Occupants

HUITT-ZOLLARS INC. (THIRD PARTY STRUCTURAL ENGINEERS)

An *“On-Call”*
Structural Engineering firm
that is contracted through
the City of Houston

September 9, 2013
“the collapse was due to fire and not
the structural load capacity of the truss roof”

Why did it Collapse so **FAST** ?

12:05:19 9-1-1 received the first call at
12:07:55 Time of Dispatch
12:08:24 Engine 51 was on scene at
12:23:26 Time of 1st collapse

....the rest of the story

Employees said they first noticed a “**burning smell**”
inside the **Kitchen** at about **09:00** o’clock

Nobody called the fire department

The fire had a **3 hour** head-start
on the Fire Department

This **can** and **does** happen **EVERYDAY!**

RISK / BENEFIT ANALYSIS

The first arriving officer is the one that performs the first Risk / Benefit Analysis

Based on the Priorities of Firefighting

1. Life Safety
2. Incident Stabilization
3. Property Conservation



OFFENSIVE VS. DEFENSIVE

What critical factors made this incident start out as an

Offensive Strategy

RISK / BENEFIT ANALYSIS

What Critical Factors did Engine 51 face when they first arrived:

- × Occupied Restaurant /Hotel
- × A Weekday – (Friday afternoon)
- × Lunch Time (12:05:19 hours)
- × Several Occupants still exiting the structure
- × Manageable Fire Conditions

All of these factors have a direct impact towards Life Safety and Incident Stabilization

“the Rescue”

“THE RESCUE”

Captain William “Iron Bill” Dowling



Captain Dowling was rescued at 12:52 pm
(31 minutes after the report of the 1st Collapse)

“THE RESCUE”

This event has been documented as the first successful RESCUE of a firefighter using a RIT-PACK



(NIOSH - 2013)

RISK VS. GAIN

RISK a lot..... To SAVE a lot.....

13:02 pm

The exterior wall had a LARGE CRACK and beginning to show severe signs of Secondary Collapse

Incident Commanders were receiving reports from OEC that E51B portable radio was still keying up intermittently*

*It was determined later that this was caused by thermal degradation of radio equipment



RISK VS. GAIN

13:03 pm

11 minutes after the Rescue of
Captain Dowling

A Secondary Collapse occurred

Trapping 3 additional Firefighters

Engineer Operator Anthony Livesay – Still recovering

Firefighter Robert Yarbrough – Disability pension

Firefighter Foster Santos – returned to duty

***Post-MAYDAY
Communications***

HUNDREDS OF TRANSMISSION “**BONKS**” OCCURRED DURING THE FIRST HOUR

<u>Time (30 minutes)</u>	<u># of Bonks</u>
First thirty (30) minutes	339 Total
Pre collapse	83
Post collapse	256
First sixty (60) minutes	579 Total
Pre collapse	83
Post collapse	496

WHAT HAS THE FIRE DEPARTMENT DONE TO IMPROVE COMMUNICATION ISSUES?

June 2013

1. HFD Staff met with Motorola® to voice concerns about several issues discovered during the Southwest Inn fire.

July 2013

2. All Radio's were re-programmed to help enhance the use and capabilities (**60 sec. to 30 sec. Time out, Emergency Call Button**)
3. The City of Houston - Radio Communication Service (RCS) requested Motorola® to research several areas that would improve HFD communication capabilities

WHAT HAS THE FIRE DEPARTMENT DONE TO CORRECT COMMUNICATION ISSUES?

September 2013

4. Radio prioritization was established to provide District Chiefs with priority communications over all other radios on the fireground.

- + 1st priority - OEC Dispatch Consoles / OEC Portables (Orange shell)
- + 2nd priority - Deputy / District Chief / Safety Officer Mobile Radios
- + 3rd priority - Deputy / District Chief / Safety Officer Portables (Red shell)
- + Heavy Apparatus / All other Portable radios (Yellow shell)

WHAT HAS THE FIRE DEPARTMENT DONE TO CORRECT COMMUNICATION ISSUES?

October 2013

5. “New” fireground communication procedures were set-up

- + Command Officers were told to use additional Talk Groups for support roles
 - × Units responding on additional alarms and those Staged
 - × Companies in Rehab
 - × EMS Division

6. The City of Houston - Radio Communication Services (RCS) improved infrastructure of the system.

- + Areas included Medical Center, Galleria and Downtown

WHAT HAS THE FIRE DEPARTMENT DONE TO CORRECT COMMUNICATION ISSUES?

7. During first quarter (FY2014) 12 Communication Captain's were created to increase the staffing numbers at OEC

OEC minimum daily staffing is now set at 16

8. OEC staff members started a ride along program with District Chiefs.

WHAT HAS THE FIRE DEPARTMENT DONE TO CORRECT THESE ISSUES?

November 2013

9. Follow-up meetings with Motorola® about the five items presented in June of 2013.
 - + “Digital Cliff”
 - + “Quick Key”
 - + A 5 second time out if no voice is transmitted
 - + “Emergency Call Button” needs to override Priority Radio’s

Note: HFD was told that new upgrades may be available in the 4th quarter 2014.

ACTIONS TAKEN BY HFD - MAY 31, 2013 TO PRESENT

The **GRACE Accountability System** was upgraded:

- Software was updated to include an “Auto-save” feature

HFD-IT has created **Electronic Personnel Files** to have better access to Emergency Contact Information.

All members need to update their “**Emergency Contact Information**” on the “New” ESS site

The Eagle-X **Thermal Imaging Cameras** collected from apparatus after the new model was delivered, were re-issued to the Incident Command Vehicles.

ACTIONS TAKEN BY HFD - MAY 31, 2013 TO PRESENT

The Houston Arson Bureau and the State Fire Marshal's Office (SFMO) developed a new statement process to limit the impact on our members who have to be interviewed

This process was tested during the Kingwood LODD

The administration began reviewing department guidelines pertaining to on-scene video recording devices

- Helmet cameras
- Dash Cams
- Other portable recording devices

INVESTIGATION, EVALUATION AND RESEARCH AGENCIES

1. Houston Fire Department Arson and Investigative Division (HFD Arson)
2. Texas State Fire Marshal Office (SFMO)
3. Texas Commission on Fire Protection
4. Harris County Institute of forensic Science (HCIFS)
5. National Institute of Occupational Safety and health (NIOSH)
6. Houston Police Department – Homicide Division
7. National Fire Protection Agency (NFPA)
8. United States Fire Administration
9. International Personnel Protection, Inc.
10. National Personal Protective technology Laboratory (NPPTL)
11. Grace Industries
12. Houston Police Department – Digital Forensic Laboratory
13. City of Houston – Radio Communication Services (RCS)
14. Houston Fire Department, Emergency Response Command – Recovery Committee

EVALUATIONS AND RECOMMENDATIONS

The Recovery Committee developed over 200 recommendations based on the Southwest Inn Fire as well as many other incidents

Recommendations organized into categories:

- 1) Fireground Operations
- 2) Training
- 3) Personnel & Administrative Issues
- 4) Equipment

NIOSH LEADING CONTRIBUTING CAUSES TO FIREFIGHTER DEATHS IN STRUCTURE FIRES:

1. Lack of evaluation of Risk vs. Gain
2. Lack of Command and Control
3. Lack of adequate SOP's
4. **Ineffective Communications**
5. Lack of adequate Training

CONTINUED AND ENHANCED TRAINING AREAS

- ✘ Incident Command
- ✘ Risk Management
- ✘ Decision Making Model
- ✘ Tactical Level
- ✘ Task Level
- ✘ Communications
- ✘ Accountability
- ✘ MAYDAY Operations
- ✘ Building Construction
- ✘ Fire Behavior

PROGRAMS AVAILABLE TO ADDRESS TRAINING

- ✘ Blue Card Command Training
- ✘ Fire Ground Survival Program
- ✘ Firefighter Safety Through Advanced Research Project (FSTAR)

**IF WE'RE NOT GOING TO USE EXPERIENCE,
EXPERIENCE HAS NO VALUE!**

