

# CIVIL SERVICE COMMISSION CITY HALL - COUNCIL CHAMBERS, 300 W. MAIN STREET FRIDAY, APRIL 28, 2023 AT 1:00 PM

# AGENDA

# CALL TO ORDER

## AGENDA ITEMS

- 1. Minutes from the April 20, 2023, Civil Service Commission Meeting
- 2. Consider and rule upon the appeals for test question #36 of the Fire Battalion Chief promotional examination administered on April 11, 2023
- <u>3.</u> Consider and rule upon the appeals for test question #76 of the Fire Battalion Chief promotional examination administered on April 11, 2023
- 4. Consider and rule upon the appeals for test question #64 of the Fire Captain promotional examination administered on April 11, 2023
- 5. Consider and rule upon the appeals for test question #79 of the Fire Captain promotional examination administered on April 11, 2023
- 6. Consider and rule upon the appeals for test question #84 of the Fire Captain promotional examination administered on April 11, 2023
- 7. Consider and rule upon the appeals for test question #20 of the Fire Driver promotional examination administered on April 12, 2023
- 8. Consider and rule upon the appeals for test question #20 of the Fire Lieutenant promotional examination administered on April 12, 2023
- 9. Consider and rule upon the appeals for test question #24 of the Fire Lieutenant promotional examination administered on April 12, 2023
- 10. Consider and rule upon the appeals for test question #34 of the Fire Lieutenant promotional examination administered on April 12, 2023
- 11. Consider and rule upon the appeals for test question #63 of the Fire Lieutenant promotional examination administered on April 12, 2023.
- 12. Consider and rule upon the appeals for test question #73 of the Fire Lieutenant promotional examination administered on April 12, 2023
- 13. Consider and Rule Upon the Appeals for Grading of the Lieutenant Promotional Exam for Taylor Rosier Administered on April 12, 2023

# **CITIZEN COMMENTS**

Citizens may speak during Citizen Comments for up to five minutes on any item not on the agenda by completing and submitting a speaker card.

# **EXECUTIVE SESSION**

The Civil Service Commission may conduct a closed session if needed in accordance with Chapter 143.053 of the Texas Local Government Code to deliberate on an appeal of disciplinary suspension; and/or under Sections 551.071 and 551.074 of the Texas Government Code to discuss personnel matters and/or legal issues with a City Attorney on a matter in which the attorney has a duty to confidentially advise the client.

## ADJOURNMENT

The Grand Prairie City Hall is accessible to people with disabilities. If you need assistance in participating in this meeting due to a disability as defined under the ADA, please call 972 237 8192 or email Lisa Norris at lnorris@gptx.org at least three (3) business days prior to the scheduled meeting to request an accommodation.

#### Certification

In accordance with Chapter 551, Subchapter C of the Government Code, V.T.C.A, the Civil Service Commission agenda was prepared and posted April 25, 2023 prior to 1:00 p.m.

Lisa Norris, Human Resources Director



# CITY OF GRAND PRAIRIE COMMUNICATION

MEETING DATE:	April 28, 2023
PRESENTER:	Lisa Norris, Civil Service Director
TITLE:	Minutes from the April 20, 2023, Civil Service Commission Meeting
<b>RECOMMENDED ACTION:</b>	Approve

The Civil Service Commission Meeting was held on April 20, 2023, at City Hall in the Council Chambers at 300 W. Main Street, Grand Prairie, Texas, 75050.

Oliver Thompson called the meeting to order at 3:02 p.m. with Commissioners Rachel Mendoza and Reg Crump present.

Also present were Lisa Norris, Civil Service Director; Euriah Brown and Michon Wynn, Human Resources Managers; and Mark Dempsey, Deputy City Attorney.

The first item on the agenda was the approval of the minutes from the Civil Service Commission meeting held on January 25, 2023. Commissioner Mendoza moved to approve the minutes, and Commissioner Crump seconded the motion. The item passed unanimously.

The next item on the agenda was to consider and approve an amendment to The City of Grand Prairie Fire Fighters and Police Officers Local Civil Service Rules and Regulations. Language was added in section 11.47 on page 42 relating to the exchange of witness and exhibit lists in the pre-hearing process to clarify that they may be provided to the Commission or to the Hearing Examiner as appropriate. Ms. Norris explained the rule change and indicated that there was a copy of the summary of changes, a redlined version of the full rules and a clean version that they would sign. She explained this is because a full version of the rule changes cannot be posted on the existing boards as there is not space. The summary and red-lined versions are posted online so they can be viewed, and the clean version of the Local Rules becomes effective after the 7-day posting period has passed. The Commission had no further question on the rule change. Commissioner Crump moved to approve the rules as provided. Commissioner Mendoza seconded the motion. The item passed unanimously.

The next item on the agenda was to designate providers qualified to complete Fire and Police Department Applicant Psychological appeals. Ms. Norris explained that the list is the same as prior years, although she was hoping to add some others after checking with cities. Only one more provider came in yesterday and therefore are not on the list provided. Most cities utilize the same providers we have on the list. As a result, this is the same list from 2018, but being signed today will demonstrate it remains current. Commissioner Mendoza motioned to approve the list as provided. Commissioner Crump seconded the motion. The item passed unanimously.

The last item on the agenda was to elect the Chair and Vice Chair. Commissioner Crump moved to elect Oliver Thompson as Chair and Rachel Mendoza as Vice Chair. Ms. Mendoza asked if the Commission would allow a few comments prior to the vote, and then asked Mr. Dempsey the procedure for making a separate motion. Mr. Dempsey confirmed a separate motion could be made, and motions would be considered in order. Ms. Mendoza then moved to nominate herself as Chair and Commissioner Thompson as Vice-Chair. Mr. Thompson indicated that if the floor was closed to nominations, he would entertain a motion accordingly. Commissioner Crump moved to close the nomination process and Commissioner Mendoza seconded the motion. This motion passed unanimously. Ms. Mendoza then asked if she could share her qualifications, so in spite of her short tenure on this Commission, they would understand her background. The Commission agreed. Commissioner Mendoza indicated that she had attended every Fire Department appeal meeting since 2018 while she had worked at the City. She also stated that in the City of Denton when she worked there, she also put together the Civil Service Commission meetings, Planning and Zoning meetings, and several others. She stated she is familiar with the Robert's Rules of Order and how to properly run meetings based upon this. Some dialogue ensued on the order of considering nominations and how to do so. Mr. Dempsey clarified they must be considered in the order made. Commissioner Crump moved to elect Oliver as Chair and Rachel as Vice Chair. Oliver seconded the motion. The item passed with a majority vote of Mr. Thompson and Mr. Crump for, and Ms. Mendoza against. Since this motion passed with a majority vote and the appointments were thereby confirmed in a joint motion, Mr. Dempsey indicated Ms. Mendoza's subsequent nomination of herself for Chair could no longer be considered and was null.

With no other discussion, the meeting was adjourned at 3:22 p.m.

Commissioner, Oliver Thompson

Commissioner, Reg Crump

Commissioner, Rachel Mendoza

Civil Service Director, Lisa Norris



# CITY OF GRAND PRAIRIE COMMUNICATION

<b>MEETING DATE:</b>	04/28/2023
PRESENTER:	Lisa Norris, Civil Service Director
TITLE:	Consider and rule upon the appeals for test question #36 of the Fire Battalion Chief promotional examination administered on April 11, 2023
APPELLANT:	Randal Singleton and John Stevenson

#### **RECOMMENDED ACTION:** Uphold or Deny the appeal and Modify the answer key if appropriate

# **QUESTION:**

36. Leaders should overcommunicate when the information is:

- 1. Time Sensitive
- 2. To correct any inaccuracies
- 3. Involving safety to your crew, team, or customer
- 4. To reinforce your all in and on task with the team
- A. Only statements 1, 2, and 3
- B. Only statements 1, 3 and 4
- C. Only statements 2, 3, and 4
- D. Statements 1, 2, 3, and 4

Keyed Answer: **D** 

#### **RESOURCE:**

No Exceptions Leadership: The Leadership Handbook, Fire Engineering, 2016; Chapter 2, Page 7

# **ALLOCATION OF ANSWERS:**

A-0; B-3; C-0; **D-1** 

# **GROUNDS OF APPEAL & RELIEF SOUGHT:**

Appellant	Grounds of Appeal	Relief Sought
Singleton Stevenson	The keyed answer is not correct. Another answer is correct and it should be allowed for credit instead of the keyed answer.	Uphold the appeal and overrule the answer key to reflect answer "B" as correct.

# **VENDOR RESPONSE:**

#### **Instructions:**

Questions 35 through 46 were taken from <u>No Exceptions Leadership: The Leadership Handbook</u>, Fire Engineering, 2016. ISBN-13: 978-1541252868. Select the best answer for questions 35 through 46 based <u>solely</u> upon the material presented in this source.

#### Pertinent Text: Pg. 7

Over communicate when the information is:

- Time sensitive
- Involves safety of your crew, team or customer
- o The information needed is long and complicated
- When history dictates the need for added conversations and direction
- Just to make sure everyone is on the same page
- To correct any <u>accuracies</u>
- To reinforce your all in and on task with the team

The author obviously made a typo in writing accuracies instead of "Inaccuracies". The test writer also misread the text and wrote inaccuracies into the question, knowing that was obviously what the author meant.

<u>As written, answer **B** is the only correct answer</u>. That being said, because the text on page 7 was written incorrectly and provided the wrong information, I would recommend removing the question from the exam.

Name:       Date:       4-12-23         INSTRUCTIONS:       Plase complete one form per question appealed. Indicate your reason for appeal below specifically and check which item below you are requesting as the "general reason for objection." Type or write legibly. If additional space is needed, go to the back of this page.         Exam Date:       4/11/2023       Rank:       Battalion Chief       Question#:       36       Source:       No       Exception       Page#		
Name: <u>Raudal Singleton</u>	APPEAL - PROMOTIONAL EXAMINATION QUESTION	lte
INSTRUCTIONS: Please complete one form per question appealed. Indicate your reason for appeal below specifically and check which item below you are requesting as the "general reason for objection." Type or write legibly. If additional space is needed, go to the back of this page. Exam Date: 4/11/2023 Rank: Battalion Chief Question#: 366 Source: No Exceptions	Name: Randal Sindama	
General reason for objection: (Check one of the following and explain fully below) M The keyed answer is not correct. Another answer is correct and should be allowed instead. My answer is B. Another answer, is also correct, in addition to the keyed answer. Both answers should be allowed. The question is faulty - there is no correct answer. The question should be <u>eliminated</u> . Other: Cother: Reasons(s) supporting your appeal: On page 7 of the source No Ecceptions Landership - the bullet points regarding selection # 2 states "To correct any accuracies" - The choice in the test booklet # 2 states "To correct any inaccuracies". The words "accuracies" and " inaccuracies " do not have the sade Meaning. Therefore, the Keyed asswer is not correct.	INSTRUCTIONS: Please complete one form per question appealed. Indicate your reason for appeal below specifically and check which item below you are requesting as the "general reason for objection." Type or write legibly. If additional space is needed, go to the back of this page.	
★ The keyed answer is not correct. Another answer is correct and should be allowed instead. My answer is B. Another answer, is also correct in addition to the keyed answer. Both answers should be allowed. The question is faulty - there is no correct answer. The question should be <u>eliminated</u> . Other:	Exam Date: 4/11/2023 Rank: Battalion Chief Question#: 36 Source: No Exceptions Page# 7	
★ The keyed answer is not correct. Another answer is correct and should be allowed instead. My answer is B. Another answer, is also correct in addition to the keyed answer. Both answers should be allowed. The question is faulty - there is no correct answer. The question should be <u>eliminated</u> . Other:	General reason for objection: (Check one of the following and explain fully below)	
Therefore, the keyed answer is not correct.		
Con page 7 of the source No Exceptions Landership - the bullet points regarding selection # 2, states "To correct any accuracies" The choice in the test booklet # 2 states "To correct any inaccuracies". The words "accuracies" and "inaccuracies" do not have the same meaning. Therefore, the keyed answer is not correct.	Another answer,, is also correct, in addition to the keyed answer. Both answers should be allowed.	
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aug accuracies . The choice in the test booklet # 2 states "To correct any inaccuracies". The words "accuracies" and "inaccuracies" do not have the same meaning. Therefore, the keyed answer is not correct.	Reasons(s) supporting your appeal:	
	# 2 states "To correct any inaccuracies". The words	
	Therefore, the keyed answer is not correct.	

APPEAL - PROMOTIONAL EXAMINATION QUESTION	Item 2.
Name: John Stevenson Date: 4/12/23	
INSTRUCTIONS: Please complete one form per question appealed. Indicate your reason for appeal below specifically and check which item below you are requesting as the "general reason for objection." Type or write legibly. If additional space is needed, go to the back of this page.	
Exam Date: 4/11/2023 Rank: Battalion Chief Question#: 36 Source: No Exceptions Leadership age# 7	
General reason for objection: (Check one of the following and explain fully below)	
$\bowtie$ The keyed answer is not correct. Another answer is correct and should be allowed instead. My answer is <u>B</u> .	
Another answer,, is also correct, in addition to the keyed answer. Both answers should be allowed.	
The question is faulty - there is no correct answer. The question should be eliminated.	
Other:	
Reasons(s) supporting your appeal:	
The source material, pg. 7, of No Exceptions Leadership provides	
a instar reasons when to overcommunicate one of the	
reasons listed in the source material states, "To correct any accuracies".	
- Question 36 of the test states "Leader should are any low and	
when the information is: One of the answer choices reads	
To correct any inaccuracies. The other three cosciler	
choices were correct. I chose Bas my answerchoice	
indicating that only statements 1, 3, 4 were correct.	
The answer key indicates D as the correct answer, which is incorrect,	
Pg 33 of the Local Civil Service Rules clearly states in section 10.38 (Appeal Guidelines) that, "Appeals shall be upheld in the following instances: A typographical error occurred in the guestion or answer which significantly alters the meaning of the guestion ".	è
I submit that the answer key be overruled and the correct answer of "B" is made accordingly.	
Continue on back of this form if needed.	

# THE LEADERSHIP HANDBOOK

2.

Just because you have been on a team or led a team for a significant amount of time, do not take for granted that your members know something. Sometimes it is very appropriate to state the obvious.

Over communicate when the information is:

- Time sensitive
- Involves safety of your crew, team or customer
- The information needed is long and complicated
- When history dictates the need for added conversations and direction
- Just to make sure everyone is on the same page
- To correct any accuracies
- To reinforce your all in and on task with the team



# CITY OF GRAND PRAIRIE COMMUNICATION

<b>MEETING DATE:</b>	04/28/2023
PRESENTER:	Lisa Norris, Civil Service Director
TITLE:	Consider and rule upon the appeals for test question #76 of the Fire Battalion Chief promotional examination administered on April 11, 2023
APPELLANT:	Randal Singleton

**RECOMMENDED ACTION:** Uphold or Deny the appeal and Modify the answer key if appropriate

## **QUESTION:**

- 76. Wood-frame buildings also have wooden floor-joist systems. In a balloon construction, the joist on the foundation will be nailed to the\_\_\_\_\_.
  - A. studs
  - B. exterior side wall
  - C. floor joist
  - D. corbel

Keyed Answer: **B** 

#### **RESOURCE:**

Managing Major Fires, Fire Engineering Books and Videos, 2001; Chapter 7, Page 70

#### **ALLOCATION OF ANSWERS:**

A-2; **B-2**; C-0; D-0

#### **GROUNDS OF APPEAL:**

Another answer is correct in addition to the keyed answer.

#### **RELIEF SOUGHT:**

Uphold the appeal and overrule the answer key to reflect answers "A" and "B" as correct.

# **VENDOR RESPONSE:**

## **Instructions:**

Questions 69 through 85 were taken from <u>Managing Major Fires</u>, Fire Engineering Books and Videos, 2001. ISBN-13: 978-0912212968. Select the best answer for questions 69 through 85 based <u>solely</u> upon the material presented in this source.

# Pertinent Text: Pg. 70-71

Wood-frame buildings also have wooden floor-joist systems. In a balloon construction, <u>the joist on the foundation will be nailed to the **exterior side wall.**</u> The joists rest directly on the sill (the bottom portion of the balloon-frame exterior wall, as opposed to the sill in a platform frame, which rests on top of the foundation) and are nailed to the studs. On the upper floors, the joists rest on a ribbon and are <u>again</u> nailed to the studs.

The author is stating that "on the upper floors (*of a platform framed structure*), the joists now rest on a ribbon (*instead of a sill like it does in the lower floors*) and are **again** nailed to the studs". (*just like they are on the lower floors*).

The author never makes any reference to the fact that joists in balloon construction are nailed to studs. In the referenced text, he is simply stating the differences between balloon frame and platform frame construction and how the lower and upper floors of platform framing both nail joists to the studs.

The question is written verbatim from the text.

#### The only correct answer is B.

APPEAL - PROMOTIONAL EXAMINATION QUESTION         Name:       Raudal Singleton         Date:       4-12-23         INSTRUCTIONS:       Please complete one form per question appealed. Indicate your reason for appeal below specifically and check which item below you are requesting as the "general reason for objection." Type or write legibly. If additional space is needed, go to the back of this page.         Exam Date:       4/11/2023         Rank:       Battalion Chief         Question#:       76         Source:       Managing         Major:       Fires         Page#       70-71    General reason for objection: (Check one of the following and explain fully below)          The keyed answer is not correct. Another answer is correct and should be allowed instead. My answer is	tem 3
INSTRUCTIONS: Please complete one form per question appealed. Indicate your reason for appeal below specifically and check which item below you are requesting as the "general reason for objection." Type or write legibly. If additional space is needed, go to the back of this page. Exam Date: <u>4/11/2023</u> Rank: <u>Battalion Chief</u> Question#: <u>76</u> Source: <u>Managing Major Fires</u> Page# <u>76-7</u> ( General reason for objection: (Check one of the following and explain fully below) The keyed answer is not correct. Another answer is correct and should be allowed <u>instead.</u> My answer is Another answer, <u>A</u> , is also correct, <u>in addition</u> to the keyed answer. Both answers should be allowed. The question is faulty - there is no correct answer. The question should be <u>eliminated.</u> Other:	
needed, go to the back of this page. Exam Date: <u>4/11/2023</u> Rank: <u>Battalion Chief</u> Question#: <u>76</u> Source: <u>Managing Major Fires</u> Page# <u>76-7</u> ( General reason for objection: (Check one of the following and explain fully below) The keyed answer is not correct. Another answer is correct and should be allowed <u>instead.</u> My answer is Another answer, <u>A</u> is also correct, <u>in addition</u> to the keyed answer. Both answers should be allowed. The question is faulty - there is no correct answer. The question should be <u>eliminated.</u> Other:	
<ul> <li>General reason for objection: (Check one of the following and explain fully below)</li> <li>The keyed answer is not correct. Another answer is correct and should be allowed <u>instead.</u> My answer is</li> <li>Another answer, A, is also correct, <u>in addition</u> to the keyed answer. Both answers should be allowed.</li> <li>The question is faulty - there is no correct answer. The question should be <u>eliminated.</u></li> <li>Other:</li></ul>	
<ul> <li>The keyed answer is not correct. Another answer is correct and should be allowed <u>instead.</u> My answer is</li> <li>Another answer,, is also correct, <u>in addition</u> to the keyed answer. Both answers should be allowed.</li> <li>The question is faulty - there is no correct answer. The question should be <u>eliminated.</u></li> <li>Other:</li> </ul>	
<ul> <li>The keyed answer is not correct. Another answer is correct and should be allowed <u>instead.</u> My answer is</li> <li>Another answer, A, is also correct, <u>in addition</u> to the keyed answer. Both answers should be allowed.</li> <li>The question is faulty - there is no correct answer. The question should be <u>eliminated.</u></li> <li>Other:</li></ul>	
<ul> <li>The question is faulty - there is no correct answer. The question should be <u>eliminated.</u></li> <li>Other:</li> </ul>	
Other:	
Reasons(s) supporting your appeal:	
Reasons(s) supporting your appeal:	
Involves the last paragraph on p. 70 and goes to page 71. The third sentence says "The joists rest directly on the sill (the bottom portion of the balloan-frame exterior wall, as opposed to the sill in a platform frame, which rests on top of the foundation) and are nailed to the studs.	
That sentence confirms that choice "A" is also correct.	
Continue on back of this form if needed.	

# **Managing Major Fires**

Item 3.

ings that were originally designed as apartment buildings have flat roofs. The cockloft area will contain the last set of ceiling joists and the rafters above them. The space between may be filled with insulation, but this isn't likely. Some buildings have a scuttle hole to the cockloft and others don't.

The final exterior weatherproof surface, for either type of building, will be of tarpaper; tar and gravel; or of a newer membrane roof over either wooden planks or plywood. If you find plywood, suspect that alterations have taken place on the existing roof.

Buildings of true ordinary construction have their upper floors tied into either joist pockets or a corbel. The floors are supported by 2 X 8 or larger wooden joists. These will generally run parallel to the shortest exterior walls—normally the front and back walls. This would indicate that the side walls, as well as any interior walls that run perpendicular to the joists, are load-bearing walls. On top of the joists will be old wooden floorboards. As with roofs, the presence of plywood in the floor indicates renovation. The set of joists that support the first floor will also be set into pockets; otherwise, they'll be resting on a foundation.

Wood-frame buildings also have wooden floor-joist systems. In balloon construction, the joist on the foundation will be nailed to the exterior side wall. The joists rest directly



An eight room Apartment Building. Do you think this building was originally designed as an eightroom Apartment Building? Credit Coleman

# Fighting Fires in Older Apartment // Item 3. 95

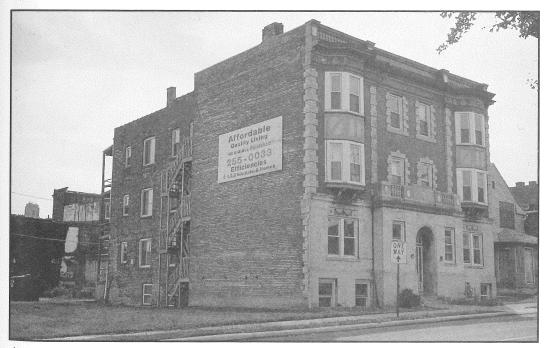
on the sill (the bottom portion of the balloon-frame exterior wall, as opposed to the sill in a platform frame, which rests on top of the foundation) and are nailed to the studs. On the upper floors, the joists rest on a ribbon and are again nailed to the studs. The subfloor and floor sit on top of the joists.

Besides the stairway, which is the dominant vertical channel, hidden voids within the walls can also cause concern. If fire enters the interior walls, it can travel to all areas of the building, especially in the case of balloon construction.

When large single-family homes are subdivided into apartments, rhyme and reason are usually left out of the equation. Several small one- and two-room apartments can be crammed into a structure originally designed to accommodate three bedrooms and a bath. Many such renovations only provide one way in and out for the tenants. Often the floor plans are asymmetrical, and dead-end hallways may be present.

Many attics are also converted into apartments. Some of these lack interior stairways. Fire in almost any portion of a building can bring heavy smoke and intense heat to an attic apartment. Consider these areas to be a priority for early search.

Civilian life safety, firefighter safety, and fire spread are primary problems in older apartment buildings. In many large cities, these calls are where the local fire department bread-and-



An ordinary constructed (exterior walls of brick or block) Apartment Building. Credit Coleman



# CITY OF GRAND PRAIRIE COMMUNICATION

<b>MEETING DATE:</b>	04/28/2023
PRESENTER:	Lisa Norris, Civil Service Director
TITLE:	Consider and rule upon the appeals for test question #64 of the Fire Captain promotional examination administered on April 11, 2023
APPELLANT:	Benjamin Morris

**RECOMMENDED ACTION:** Uphold or Deny the appeal and Modify the answer key if appropriate

#### **QUESTION:**

- 64. Which of the following statements regarding venting around exposures and horizontal venting for extinguishment is false?
  - A. Due to the possibility of auto exposure, never vent when directly below open windows, within porches/overhangs, or when combustible siding is present.
  - B. Ensure the fire attack is underway prior to horizontally venting for extinguishment.
  - C. When breaking glass, be sure to start with an upper corner of the window, as the topmost portion is subjected to the highest heat and may be weakened.
  - D. Venting opposite the handline and minimizing the time between the creation of that opening and fire suppression capitalizes on the additional air entrainment and subsequent exhaust efficiency.

Keyed Answer: A

#### **RESOURCE:**

<u>Coordinating Ventilation: Supporting Extinguishment and Survivability</u>, Fire Engineering Books; Chapter 7, Page 90-93

#### **ALLOCATION OF ANSWERS:**

**A-2;** B-5; C-0; D-1

#### **GROUNDS OF APPEAL:**

Another answer is correct in addition to the keyed answer.

#### **RELIEF SOUGHT:**

Uphold the appeal and overrule the answer key to reflect answers "A" and "B" as correct.

#### **VENDOR RESPONSE:**

#### **Instructions:**

Questions 52 through 68 were taken from <u>Coordinating Ventilation: Supporting Extinguishment</u> <u>and Survivability</u>, Fire Engineering Books. ISBN-13: 978-1593704377. Select the best answer for questions 52 through 68 based <u>solely</u> upon the material presented in this source.

#### Pertinent Text: Pg. 90-93

#### There is no argument that answer A is a <u>false</u> statement and therefore the correct answer.

The argument is whether <u>statement B</u>, which is taken from page 92 as shown below, is a <u>correct</u> statement.

# Guideline 6 Vent for Extinguishment—Horizontal

Ensure fire attack is underway prior to horizontally venting for extinguishment

Pages 92-94 are dedicated to enforcing this statement. The whole premise is to enforce the fact that horizontal ventilation for extinguishment is very risky and dangerous. The author states that "horizontal ventilation must not occur until the engine company is in position to successfully advance in on the fire". "Because the grace period prior to water application is highly variable according to the conditions present, its potential benefits can be fleeting, making it extremely challenging to accurately predict the time frame. It is most prudent, therefore, to initiate ventilation along with the onset of fire attack." --- The author is trying to emphasize the point that fire attack must be underway prior to horizontal ventilation.

The key term that is possibly being misunderstood is <u>fire attack</u>. This is not simply putting the "wet stuff on the red stuff". **Fire attack is everything involved in getting to the point of being able to apply water to the fire**. On page 94, the author tells a story how he stretched a dry line to the 3<sup>rd</sup> floor apartment. He looked in the door and saw very little flame. He called for the engine to charge his line, but before he had water, a firefighter vented the window from outside. Because horizontal ventilation was initiated prior to all aspects of "fire attack" being fully in place, the fire became very intense and dangerous.

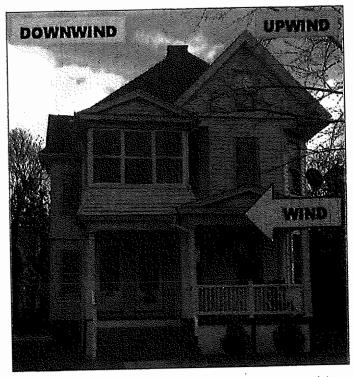
The whole purpose of Guideline 6 is to emphasize that all elements of "Fire Attack" must be in place prior to horizontally venting for extinguishment.

Statement B is a true statement.

Statement "A" is the only false statement and therefore the only correct answer.

APPEAL - PROMOTIONAL EXAMINATION QUESTION	
Name: Benjamin Marchis Date: 4/13/2023	
INSTRUCTIONS: Please complete one form per question appealed. Indicate your reason for appeal below specifically and check which item below you are requesting as the "general reason for objection." Type or write legibly. If additional space is needed, go to the back of this page.	
Exam Date: 4/11/2023 Rank: Captain Question#: 64 Source: Coordinating Ventilation Page# 90-93	
General reason for objection: (Check one of the following and explain fully below)	
The keyed answer is not correct. Another answer is correct and should be allowed instead. My answer is	
Another answer,, is also correct, in addition to the keyed answer. Both answers should be allowed.	
The question is faulty - there is no correct answer. The question should be eliminated.	
Other:	
Reasons(s) supporting your appeal:	
When discussing Fire Attack [ Ventilation the book contradicts itself. Answer" B" which is supported to be TIME is in the book under buildeline to on page 92 nowever on page 93 it states If it is most prudent, therefore, to initiate ventilation along with the onset of Fire Attack" This Statement would make "B" false which stated I Ensure Fire attack is inder any prior to horizontally venting for extingaishment"	





**Figure 7–8.** Vent the downwind face of the roof when a wind-impacted condition exists. Courtesy: Nicholas Papa

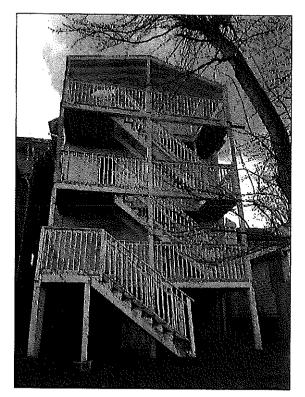
# Guideline 5 Exposures

# Vent in a manner that does not create an exposure problem

While this may seem obvious, there are several precautions that must be taken to ensure ventilation does not endanger any exposures, whether interior or exterior. Many of the interior exposure hazards can be addressed through the door control measures previously covered, and more importantly, by the proper placement and application of handlines. To prevent the threat of autoexposure, use caution when venting directly below open windows, especially when window treatments are exposed, or within porches/overhangs, or when combustible siding is present (fig. 7–9). If such openings are the only option, be sure the fire is in check by the attacking handline before taking them, ensuring the fire does not 18 the side of the building, autoexposing to upper floors. The same is true for

ltem 4.

windows that serve fire escapes and balconies. If they are being used for access/ egress, window venting below must be withheld, as members operating above could be cut off. Also, if any building occupants are attempting to escape or seek



**Figure 7–9.** Open wood porches present a significant exposure hazard. Courtesy: Matt Kelly



**Figure 7–10.** These wood-frame multiple dwellings, sheathed in asphalt ("gasoline") siding, are only about 10' apart. Courtesy: Nicholas Papa refuge, they can quickly become endangered by smoke and/or flames from below, potentially trapping and severely injuring them.<sup>12</sup>

<sup>'</sup> The other more traditional exposure hazard consists of neighboring buildings in close proximity. This can be especially problematic when these adjacent structures are wrapped in combustible sheathing or siding, notably asphalt shingles ("gasoline siding") and wall cladding systems (such as exterior insulation and finish systems [EIFS]) (fig. 7–10). When these conditions exist, attempt to utilize another side of the fire building for window venting or hold off on taking the glass on that exposure side until the advancing engine company is effectively extinguishing the fire, as previously described.

# *Guideline*,6 Vent for Extinguishment—Horizontal

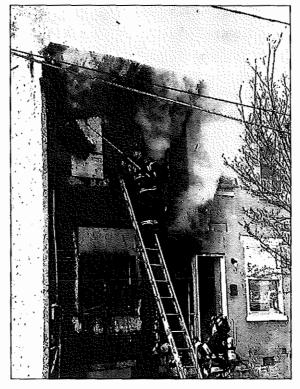
# Ensure fire attack is underway prior to horizontally venting for extinguishment

The timing aspect of horizontal ventilation for extinguishment is one of the most critical aspects to the success of the fire attack. If it comes too early, the air exchange will cause the fire to react to the additional supply of oxygen. If water is not promptly applied, the growing fire can consume the window opening. At that point the fire will spread toward the next available outlet, the open doorway, causing it to travel toward the advancing engine company.

While there is potential for conditions to briefly improve, particularly at the floor level closest to the intake side, it will begin to expire once the growing fire overwhelms any exhaust openings created. Horizontal ventilation for this purpose must not occur until the engine company is in position to successfully advance in on the fire.<sup>13</sup> If the ventilation comes too late, however, the attacking crew will not receive the intended relief when they need it the most, causing them to unnecessarily "take a feed" (fig. 7–11).

When breaking glass, be sure to start with an upper corner of the window, as the topmost portion is subjected to the highest heat and may be weakened. Because heat and smoke naturally rise, doing so will exhaust the greatest amount, in addition to allowing conditions to be immediately evaluated prior to clearing the rest of the window. Taking the top section of the window first prevents a large section of glass from falling down onto the venting firefighter. To maximize the exhaust efficiency, the window should be *trimmed out*, cleaning out any remaining glass shards and removing any window treatments, the sash, and obstructions that might occlude the opening.<sup>14</sup>

#### ltem 4.



**Figure 7–11.** The firefighter positioned the ground ladder to vent both windows. Courtesy: Nathen Maronski

There is some debate as to exactly when window venting should begin. Because the grace period prior to water application is highly variable according to the conditions present, its potential benefits can be fleeting, making it extremely challenging to accurately predict the time frame. It is most prudent, therefore, to initiate ventilation along with the onset of fire attack. At the very least, the engine company officer must be certain that the nozzle team is in position with a charged handline and is capable of advancing to the seat of the fire. The nozzle team must possess overwhelmingly superior force and dominant offensive positioning. Venting opposite the handline and minimizing the time between the creation of that opening and fire suppression capitalizes on the additional air entrainment and subsequent exhaust efficiency. When properly sequenced, the thermal and toxic exposure can be reduced, limiting the hazard to the interior crews and improving victim survivability.<sup>16</sup>

Effectively timing this operation can be as simple as a brief radio transmission requesting/confirming ventilation. As previously stated, however, the engine company officer may be a working member of the nozzle team (due to limited staffing) and thus unable to reach the radio mic to transmit at the ideal moment. In such instances, the outside vent/roof firefighters must be monitoring the radio traffic for key benchmarks and diligently sizing up the fireground to gauge the progress and determine the correct operational tempo. By engaging their sen 21 they can observe changes in the conditions such as dissipation of the fire, lightening of the smoke, steam conversion, and the handline's stream intermittently exiting the building. They can also listen for the sound of the stream impacting the interior surfaces. While it is best to receive explicit confirmation from the officer in charge of the fire floor, skilled outside vent and roof firefighters are able to reliably utilize these sensory inputs or cues to effectively time the operation.<sup>16</sup>

# Learning the Hard Way

After making lieutenant, I was assigned back to an engine company. In the swipe of a pen, I went from being a ladder company firefighter—the one providing the ventilation—to being an engine officer—the one requesting it. Being back on the receiving end of ventilation has provided me with an entirely different perspective and a greater appreciation for the tactic. One of my early fires was a top-floor fire in a three-decker (a three-story, balloon-frame multiple dwelling with one unit per floor), our "bread and butter" (fig. 7–12). We stretched dry to the third-floor landing as another company had confirmed a *small* fire in the front bedroom and controlled the apartment door. I noted a moderate smoke condition through the crack of the door (as it was not latched shut) but could not see any active flames.

Once we had the line flaked out, I grabbed the mic of my portable radio and made the request for the line to be charged. As soon as I released the transmit button, I heard the sound of breaking glass. I had not called for ventilation, and more importantly, we did not have any water yet. To make matters worse, the windows taken were in the adjacent living room. As the line was beginning to fill with water, we saw a glow immediately appear in the front bedroom. The room quickly touched off, and fire began to roll out and across the ceiling, directly toward the newly created openings. Luckily, there was no delay in the arrival of our water. The line was bled off and flow checked, the door was opened, and the stream knocked down the fire just as quickly as it had escalated.



Figure 7–12. Street view Courtesy: Frank Papa Jr.



# CITY OF GRAND PRAIRIE COMMUNICATION

<b>MEETING DATE:</b>	04/28/2023
PRESENTER:	Lisa Norris, Civil Service Director
TITLE:	Consider and rule upon the appeals for test question #79 of the Fire Captain promotional examination administered on April 11, 2023
APPELLANT:	Jason Payne

**RECOMMENDED ACTION:** Uphold or Deny the appeal and Modify the answer key if appropriate

#### **QUESTION:**

- 79. Which of the following are reasons emergency generators sometimes fail?
  - 1. Sprinkler system activation
  - 2. Poor fuel quality
  - 3. Total power transfer happens too fast
  - 4. Bad transfer activities
  - 5. Dead batteries
    - A. Only statements 1, 2, 3, and 5
    - B. Only statements 2, 3, 4, and 5
    - C. Only statements 2, 4, and 5
    - D. Statements 1, 2, 3, 4, and 5

Keyed Answer: B

# **RESOURCE:**

Firefighters and Highrises: 2nd Edition, Outskirts Press, 2015; Chapter 11, Page 144

#### **ALLOCATION OF ANSWERS:**

A-1; **B-1**; C-6; D-0

#### **GROUNDS OF APPEAL:**

Another answer is correct in addition to the keyed answer.

#### **RELIEF SOUGHT:**

Uphold the appeal and overrule the answer key to reflect answers "B" and "C" as correct.

#### **VENDOR RESPONSE:**

#### **Instructions:**

Questions 69 through 85 were taken from <u>Firefighters and Highrises: 2<sup>nd</sup> Edition</u>, Outskirts Press, 2015. ISBN-13: 978-1478759423. Select the best answer for questions 69 through 85 based <u>solely</u> upon the material presented in this source.

#### Pertinent Text: Pg. 144

The test taker argues that statement 3 does not cause generators to sometimes fail. The very first reason for generator failure described on page 144 pertains to <u>total power transfer happening too fast</u>. The author states "For a variety of reasons, generators fail from time to time. When primary power is lost and a generator starts up, the automatic power <u>transfer to various components should be sequential</u> <u>rather than all at once</u>. If the **total power transfer happens too fast**, there will be a sudden voltage drop, which will throw breakers and deprive critical equipment of power".

The author definitely feels that total power transfer happening too fast is a cause for generator failure. You can tell because he starts the next paragraph with the following: "<u>Another common cause</u> of generator failure is...".

# This proves that statement 3 is a common cause of generator failure as well as statements 2, 4, and 5.

There seems to be no argument from the test taker that statements 2, 4, and 5 are causes of generator failure; therefore, statements 2, 3, 4, and 5 are all common causes of generator failure.

The question asks "Which of the following are reasons emergency generators fail?" The correct answer must include all of the causes of generator failure.

#### Answer B is the only correct answer.

Item 5. APPEAL - PROMOTIONAL EXAMINATION QUESTION Name: ASON 1NE Date: INSTRUCTIONS: Please complete one form per question appealed. Indicate your reason for appeal below specifically and check which item below you are requesting as the "general reason for objection." Type or write legibly. If additional space is needed, go to the back of this page. Rank: Captain Question#: 19 Source: Fire Fighting & High Mises Page# 144 Exam Date: 4/11/2023 General reason for objection: (Check one of the following and explain fully below) The keyed answer is not correct. Another answer is correct and should be allowed *instead.* My answer is \_\_\_\_\_. Another answer, \_\_\_\_\_, is also correct, in addition to the keyed answer. Both answers should be allowed. The question is faulty - there is no correct answer. The question should be eliminated. \_\_\_ Other:\_\_\_\_ Reasons(s) supporting your appeal: IN REGARD TO #3 (TOTAL POWER TRANSFER HADRENS TOO FAST NOT NOTE THAT PROCESS CAUSES "FAILURE" IT ONLY STATES THERE WILL BE A SUDDEN VOLTAGE DROP, WHICH WILL TURDW BREAKERS & DEDRIVE (PITICAL POWER BATTERIES STATE " GENERATOR QUANT EAD STATES ... ACTUAL TRANSFER SUITCHES ALSO "EQUIPMENT FAILS TO RECEIVE ENERYENCY POWER" FALL UNDER THE "GENERATOR Linough ALL LENDING 10 C 11 ER ODTION CORECT, SINCE 15 " GENERATOR FA. RECTLY LURE TIED OR " Loss 2.0 RECEIVE " To Continue on back of this form if needed.

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path as the primary electrical riser, power for emergency lighting usually cannot be controlled from electrical rooms on individual floors. Instead, there is usually a breaker panel for emergency lighting in electrical rooms on every third to fifth floor. The breakers in those panels control the emergency lighting on multiple floors.

# **Generator Failure**

For a variety of reasons, generators fail from time to time. When primary power is lost and a generator starts up, the automatic power transfer to various components should be sequential rather than all at once. If the total power transfer happens too fast, there will be a sudden voltage drop, which will throw breakers and deprive critical equipment of power.

Another common cause of generator failure is poor fuel quality. Diesel left in the tank too long deteriorates and becomes unusable. There are companies that specialize in the maintenance and reconditioning of stored diesel fuel. Some buildings aren't as good as others at maintaining fuel quality.

Dead batteries are another cause of generator failure. Just like a car, a generator has a starter that needs a battery to operate.

Bad transfer switches are also a problem. Each component on the emergency power system has an emergency transfer switch. In the best of worlds, those switches would be tested and exercised regularly but in the real world, that's hard to do. In many cases, generatortesting only tests selected ATSs while others remain untested until an actual power loss occurs. As a result, critical equipment sometimes fails to receive emergency power because of a failed ATS.

One such failure was in a Toronto building during a major blackout. The generator was in a room with pneumatically controlled dampers, which were supposed to open when the generator turned on so that air could flow in and cool the generator. The air compressor that operated the dampers was on the emergency power system. But, when primary power was lost and the generator turned on, the ATS



# CITY OF GRAND PRAIRIE COMMUNICATION

<b>MEETING DATE:</b>	04/28/2023
PRESENTER:	Lisa Norris, Civil Service Director
TITLE:	Consider and rule upon the appeals for test question #84 of the Fire Captain promotional examination administered on April 11, 2023
APPELLANT:	Jason Payne

**RECOMMENDED ACTION:** Uphold or Deny the appeal and Modify the answer key if appropriate

#### **QUESTION:**

- 84. Throughout this book, there have been many mentions of the importance of clearing the attack stairwell of civilians before opening the door to the fire floor. Whose responsibility is it to verify that the attack stairwell is clear of evacuees?
  - A. Initial Attack Team
  - B. Fire Investigation Team (FIT)
  - C. Rapid Ascent Team (RAT)
  - D. Rapid Intervention Team (RIT)

Keyed Answer: C

#### **RESOURCE:**

Firefighters and Highrises: 2nd Edition, Outskirts Press, 2015; Chapter 11, Page 212

#### **ALLOCATION OF ANSWERS:**

A-2; B-0; C-6; D-0

#### **GROUNDS OF APPEAL:**

Another answer is correct in addition to the keyed answer.

#### **RELIEF SOUGHT:**

Uphold the appeal and overrule the answer key to reflect answers "A" and "C" as correct.

# **VENDOR RESPONSE:**

## **Instructions:**

Questions 69 through 85 were taken from <u>Firefighters and Highrises: 2<sup>nd</sup> Edition</u>, Outskirts Press, 2015. ISBN-13: 978-1478759423. Select the best answer for questions 69 through 85 based <u>solely</u> upon the material presented in this source.

#### Pertinent Text: Pg. 212

The test taker argues that the book does not state that it is the responsibility of the Rapid Ascent Team (RAT) to clear the attack stairwell. On page 212 it states "the Rapid Ascent Team is basically a team of firefighters sent to the top of a building early in an incident to descend through the attack stairwell, moving evacuees out of it before the fire floor door is opened." The next paragraph states "<u>Their sole purpose</u> should be to make one swift pass through the attack stairwell to clear it of evacuees. After that, frequent PA announcements can be relied on to keep people out of it".

Very simply put, if firefighters are given the assignment of Rapid Ascent Team (RAT), their sole job is to verify that the attack stairwell is clear of evacuees, <u>it is their responsibility</u>. No one on a fire-scene "acts" without being given orders.

The test taker argues that Answer A is also a correct answer.

Pg. 199 says "...it should be cleared and is best verified by **firefighters**".---*aka. Rapid Ascent Team* Pg. 69 says "In addition to making announcements, **firefighters** must physically clear the attack stairwell of occupants before fire attack begins".

**<u>Note</u>:** These "**firefighters**" have been assigned to Rapid Ascent Team by the Incident Commander. These actions are <u>not</u> taken by the Initial Attack Team.

#### Pg. 225 -- Rules to Live By

"Never attack the fire from a stairwell that may have people in it. Every effort must be made to clear occupants from the attack stairwell before the door is opened to attack the fire."—*The Initial Attack Team will not begin fire attack until they hear from the Rapid Ascent Team that the attack stairwell is clear of evacuees.* 

The crew assigned as **Initial Attack Team** has the job of locating, confining, and extinguishing the fire which does not include going to the top of the structure and clearing the entire attack stairwell of evacuees. If they choose to do that, there will be no one doing the Initial Attack Team assignment.

Answer A is not correct.

Answer C: Rapid Ascent Team is the <u>only</u> correct answer.

	Γ
APPEAL - PROMOTIONAL EXAMINATION QUESTION	
Name: JASON TAYNE Date: 4/18/23	
INSTRUCTIONS: Please complete one form per question appealed. Indicate your reason for appeal below specifically and check which item below you are requesting as the "general reason for objection." Type or write legibly. If additional space is needed, go to the back of this page.	
Exam Date: 4/11/2023 Rank: Captain Question#: 84 Source: Fire Fight Example 212	
General reason for objection: (Check one of the following and explain fully below)	
The keyed answer is not correct. Another answer is correct and should be allowed <b>instead.</b> My answer is	
X Another answer, A is also correct, in addition to the keyed answer. Both answers should be allowed.	
The question is faulty - there is no correct answer. The question should be eliminated.	
Other:	
Reasons(s) supporting your appeal:	
THE STATEMENTS EXPLAINING THE (RAT) DO NOT SPECIFICALLY NOTE THEY ARE SOLEY "RESPONSIBLE" FOR CLEARING THE ATTACK STAIRWELL.	
THEY ARE JOLEY "RESTONSIBLE" FOR CLEAKING THE ATTACK STAIRWELL.	
- PS 199 STATES - THE ATTACK STAIPWELL MUST BE CLEADED 15	
BEST VERIFIED BY FIRE FIGHTERS.	
- Pg 225 Discusses THE FIRE ATTACK TEAM, STATING EVERY EFFORT SHOULD	
BE MADE TO CLEAR OCCUPANTS FROM THE ATTACK STAR WELL.	
- pg 69 - IN DEDITION TO MAKING ANNOUNCEMENTS, FIREFIGHTERS MUST PHYSRALLY	
CLEAR THE ATTACK STAIRWELL OF OCCUPANTS BEFORE FIRE ATTACK BEGINS.	
Continue on back of this form if needed.	
Conduct on back of this form in inclucu.	

6.

Item 6.

Unfortunately, some buildings don't have public address speakers in the stairwells, some don't have clear signage indicating stairwell designation and some reentry floors with electric locks may fail to unlock. In addition to making announcements, firefighters must physically clear the attack stairwell of occupants before fire attack begins. Failure to do so has resulted in deaths.

City codes normally require buildings to provide reentry floors at least every five floors. Reentry floors are floors at which evacuees can exit one stairwell, cross through the tenant area and continue their evacuation down the other stairwell. The stairwell doors on reentry floors must either be permanently unlocked or unlock upon alarm.

# **U-Return Stairs**

There are several different types of stairwells. The most common is the U-return stairwell. It's configured just as the name implies. It steps up from each floor to a landing where it turns to return to the same side of the core on the next floor. The stairwell doors are in much the same place on each floor, stacked atop one another. So if firefighters know which side of the building the fire is on and which stairwell always opens on that side, they know which stairwell is closest to the fire. And they know that the opposite stairwell is likely the best evacuation stairwell.

The stacking of stairwell doors sometimes deviates. In buildings where the upper floors are smaller than the lower ones, the core also becomes smaller. Consequently, the stairwells may have to move in closer to the center of the building. That requires a stairwell transition, which means the last large floor will have an enclosed corridor to reposition the stairwell. If the stair had been on the east side of the core on the large floors, it may now be on the north or south side. Stairwell transitions can be disorienting. It doesn't take many turns to skew a person's internal compass. Otherwise, U-return stairwells are fairly stable in terms of orientation.

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- How are they identified (what are they called)?
- Which stairwells can be accessed from the lobby?
- Which stairwells access the roof? Where are the reentry floors?
- Are stairwell door manually or electrically locked?
- Where are the stairwell door keys? How many are there?
- What communication capabilities do the stairs offer?

During all of this time, the fire is burning. A good amount of self-discipline is required for the fire officer to stay on task. But he/ she must remember the basic priorities of firefighting: first rescue, then confine the fire and protect exposures and finally extinguish the fire. Sometimes the best way to protect occupants is to quickly put the fire out. But there are two important things to remember before pursuing that tactic.

First, the attack stairwell must be cleared of occupants before the door to the fire floor is held open. Not just four or five floors above the fire floor but the entire stairwell. This can be initiated through the public address system but is best verified by firefighters.

The second thing to remember is that a heavily involved highrise floor may not be extinguished until some of the fuel has been consumed. When a large floor area is fully involved, even if enough hoselines and firefighters could be squeezed through the stairwell doors, there is not enough water to support that many hoselines. If the building still has occupants in it and if there is any doubt about being able to put the fire out, the initial focus should be on confining the fire. That means leaving the stairwell doors closed and preventing extension of the fire to the floor above.

Either way, whether the IC decides to attack or contain the fire, information about the standpipe outlets is needed.

• Where are the standpipe outlets in the fire area?

Item 6.

# Rapid Ascent Team (RAT)

Through this book, there have been many mentions of the importance of clearing the attack stairwell of civilians before opening the door to the fire floor. Other publications downplay the importance of this function—some instruct firefighters to climb several floors above the fire, holler and if no one answers, throw the fire floor door open and go for it. Such a casual attitude seems to violate the basic tenets of firefighting. Rescue is the first priority of all structural firefighting and getting people out of a stairwell before flooding it with lethal smoke is fundamental to highrise firefighting. But how do you go about it?

In 2003, the Chicago Fire Department answered that question by implementing the Rapid Ascent Team (RAT). Basically, that's a team of firefighters sent to the top of a building early in an incident to descend through the attack stairwell, moving evacuees out of it before the fire floor door is opened. Used in conjunction with PA announcements, it is a smart, effective practice.

The Rapid Ascent Team should also be a Rapid Descent Team. Keep it simple. The team should get to the top of the building as quickly as possible and begin their descent as soon as the attack stairwell is chosen. Their sole purpose should be to make one swift pass through the attack stairwell to clear it of evacuees. After that, frequent PA announcements can be relied on to keep people out of it.

Obviously, an elevator that doesn't serve the fire floor is the preferred method of getting the team to the top. If the fire is in the top elevator zone, it may be preferable to use the next highest elevator bank and take the stairs the rest of the way up. Some buildings though, are served by a single bank of elevators—particularly tall hotels—and a decision will have to be made as to whether or not to use them. Much will depend on the location and magnitude of the fire as well as the number of floors the team would have to climb if they do not take the elevator past the fire floor. It also depends on the

- Never attack the fire from a stairwell that may have people in it. Every effort must be made to clear occupants from the attack stairwell before the door is opened to attack the fire. Firefighters should not think a pressurized stairwell will prevent smoke from a serious fire from entering the stairs through an opened door. Pressures generated by a fire can overpower stairwell pressurization to contaminate the stairs.
- Unless a hoseline is going through it, never block stairwell doors open. That includes the door to the stairwell at the bottom of the building. Open doors diminish the benefits of stairwell pressurization and accentuate stack effect. That is particularly a problem in warm climates because it pulls smoke down the stairwell.
- When forcing doors open, be very careful not to damage them in a way that will prevent them from closing properly. If the door is very hot, and it is not yet time to advance a hoseline, don't open it because heat distorts doors and it probably will not reclose properly.
- Generally speaking, a hoseline should not be connected to a standpipe outlet in the tenant area of the fire floor. If the fire officer is absolutely certain the fire can be easily managed, it may be acceptable in order to keep smoke out of the stairwell. Otherwise, it should be connected in the stairwell or, if there are no outlets in the stairwells, in the tenant area of the floor below the fire. It is senseless to try to connect on the fire floor when fire and smoke conditions are bad. Even when smoke conditions are light but have the potential for getting bad, firefighters are creating a budding hazard for themselves—and for the entire operation—by connecting on the fire floor.
- Be certain you have enough hose and enough firefighters to reach the fire. If you're not sure you have enough hose, add more lengths before advancing onto the fire floor. If you lay



# CITY OF GRAND PRAIRIE COMMUNICATION

MEETING DATE:	04/28/2023
PRESENTER:	Lisa Norris, Civil Service Director
TITLE:	Consider and rule upon the appeals for test question #20 of the Fire Driver promotional examination administered on April 12, 2023
APPELLANT:	Andrew Grondin
<b>RECOMMENDED ACTION:</b>	Uphold or Deny the appeal and Modify the answer key if appropriate

## **QUESTION:**

- 20. Five steps are important in creating a culture of safety. First, the organization must build trust among its members. Which of the following statements is <u>not</u> one of the remaining four steps in creating a culture of safety?
  - A. The organization must demonstrate a willingness to reduce error in the system.
  - B. The organization must adopt and enforce a punitive policy toward errors.
  - C. The organization must provide training in error avoidance, detection, and management strategies for the crews.
  - D. The organization should provide training in evaluation and reinforcing error avoidance, detection, and avoidance.

Keyed Answer: **B** 

# **RESOURCE:**

<u>Crew Resource Management for the Fire Service</u>, Fire Engineering Books, 2003; Chapter 2, Page 36-37

## **ALLOCATION OF ANSWERS:**

A-3; **B-32**; C-2; D-6

#### **GROUNDS OF APPEAL:**

Another answer is also correct, in addition, to the keyed answer. Both answers should be allowed for credit.

#### **RELIEF SOUGHT:**

Uphold the appeal and overrule the answer key to reflect answers "B" and "D" as correct.

#### **VENDOR RESPONSE:**

#### **Instructions:**

Questions 18 through 34 were taken from <u>Crew Resource Management for the Fire Service</u>, Fire Engineering Books, 2003. ISBN-13: 978-1593700065. Select the best answer for questions 18 through 34 based <u>solely</u> upon the material presented in this source.

#### Pertinent Text: Pg. 38

#### There is no argument that B is the correct answer.

The test taker argues that answer D is also correct because of a typo. Answer D comes from page 38 where it states "The organization should provide training in evaluation and reinforcing error avoidance, detection, and management". Leaving the word "management" off the end of the sentence does not make the statement incorrect. Everything mentioned in answer D are parts of the four steps in creating a culture of safety, which is exactly what the question is looking for.

The question asks "Which of the following statements is **<u>not</u>** one of the remaining four steps in creating a culture of safety?"

Answers A, C, and D are the remaining four steps in creating a culture of safety.

Only answer B is <u>not</u> one of the four steps in creating a culture of safety.

#### The only correct answer to question #20 is answer B

APPEAL OF PROMOTIONAL EXAMINATION QUESTION	Item 7.
Name: <u>Andrew Grandin</u> Date: <u>4-12-23</u>	
INSTRUCTIONS: Please complete one form for each question that you wish to appeal. State clearly what you believe is wrong with the question and provide a reason for your belief. Please type or write legibly. If addition space is needed, go to the back of this page.	al
DATE OF EXAM: 4-12-23 TEST RANK: D/O QUESTION # ZO	2
REFERENCE PAGES Py 38 REFERENCE BOOK: CREW RESOURCE MANAGEMENT	
General reason for objection: (Check one of the following and explain fully below)	
The keyed answer is not correct. Another answer is correct and it should be allowed for credit <b>instead</b> of the keyed answer. My answer is	of
Another answer is also correct, <u>in addition</u> , to the keyed answer. Both answers should be allowed credit. My answer is <b>D</b>	for
The question is faulty because there is no correct answer among the choices. The question should <u>eliminated.</u>	d be
Other:	
De a Answer D states "The organization should provide training In evaluation and reinforcing error availance, detection, and avail py 35 in the test states "The organization should provide training in	once.
evaluation and reinforcing acros avaidance ( detection, and manager	
Therefore, consurer D is also increase por the test for the	 •
type not one of the 4 remaining steps in creating	
a culture of safety, due to the word management no	*
word " our idence."	<u></u>
Continue on back of this form if needed.	36

#### 36

Item 7.

Unfortunately, more than 100 times a year, death gets the last laugh. If the aviation industry's experience is any measure, we can reduce those deaths by 80%. There would be 80 fewer fire-fighter funerals, 80 fewer grieving families, and 80 fewer lost colleagues, and eighty fewer one-parent families each year. This can happen if only we can change the culture of the fire service from rugged danger cowboys into thinking, communicating, evaluating and monitoring, professional firefighters.

The culture change begins at both ends of the spectrum. National leaders in the fire service need to spread the message. At the same time, the cultural change needs to be inculcated at the entry firefighter level. When the two messages meet in the middle, we will have truly created a culture of safety.

### CREATING THE SAFETY CULTURE

Five steps are important in creating a culture of safety. First, the organization must build trust among its members. The honest sharing of safety information must be encouraged among all members of the organization. Junior members of the organization must not fear reprisal or retaliation from superiors. Senior members of the organization must not be punished for pointing out a problem where one was covered up successfully in the past. Only in an atmosphere of honest sharing of safety information and honest steps toward resolution of safety concerns can a culture of safety be developed.

Second, the organization must adopt a non-punitive policy toward error. Error is part of the human condition. Human beings make errors. For years we have tried to deny the simple fact of life, *people make mistakes*. We try to train away errors. We say to our leaders, "You are now a leader, you can no longer be human. You can make no mistakes, even though they are wired into your being."

#### ltem 7.

The fact of the matter is—our leaders are human beings. They do make mistakes. Instead of denying the obvious, we should plan on people making errors, and program checks and balances into our system to catch those errors. The only way to accomplish such a balance is to know when and how those errors occur. To gain that knowledge, we must ensure that each error is reported. If we punish human beings for reporting errors, we deny ourselves the information necessary to program checks into the system. We know humans will make errors. If we deny ourselves the information to stop an error, the error will occur over and over and over again; and one fateful day, it will combine with a series of other errors to kill one of our friends.

An organization should develop a non-punitive policy toward error, which does not punish those who are trying to accomplish their jobs in accordance with the regulations and the SOPs. Then the organization has the opportunity to address the errors and to develop a safer organization.

Third, the organization must demonstrate a willingness to reduce error in the system. All of the emphasis on safety and development of error reporting does not mean anything if the organization simply gives lip service to trapping the error. Honest, concrete steps must be taken toward the reduction of error, within a reasonable time after reporting the error. When members of the organization see positive evaluation, changes, and steps toward solving the problems in the organization, the members will begin to address the errors themselves.

Fourth, the organization must provide training in error avoidance, detection, and management strategies for the crews. In order to successfully combat error on the fire scene, the firefighter must be given the appropriate tools and language to recognize and communicate the problem. If the crews are given the tools to address the issue, the authority to address the issue, and the knowledge of what the issues are, the issues will be addressed. No firefighter goes out for a day on the job and says, "I'm going to get myself or someone else hurt today." The natural drive toward self-protection will motivate the crew into safety action. Given the tools, firefighters will protect their own.

ltem 7.

Finally, the organization should provide training in evaluation and reinforcing error avoidance, detection, and management. A clear, honest debriefing of incidents, showing both the good and bad points, serves as a perfect tool for meeting this goal. The NASA Space Flight Resource Management Program contains an excellent debriefing tool and checklist for evaluation of both training and missions. Astronauts and trainers alike are instructed on the debriefing process and all share a common goal of safety. The culture is very safe in an organization where a small mistake can mean certain death of both the astronaut and the organization.

The firefighter faces the same challenge as the astronaut. Our deaths, though not as spectacular, are just as real.

### REFERENCES

<sup>1.</sup> Wildland Fires Safety Awareness Study: Phase III, "Implementing Cultural Changes for Safety," Tri-Data Corporation, 1999.



## CITY OF GRAND PRAIRIE COMMUNICATION

MEETING DATE:	04/28/2023
PRESENTER:	Lisa Norris, Civil Service Director
TITLE:	Consider and rule upon the appeals for test question #20 of the Fire Lieutenant promotional examination administered on April 12, 2023
APPELLANT:	Chris Rodgers

**RECOMMENDED ACTION:** Uphold or Deny the appeal and Modify the answer key if appropriate

### **QUESTION:**

20. Which of the following statements regarding trusses are correct?

- 1. The triangular is the most common type of truss used to form a peaked roof.
- 2. The simplest form of a truss is a planar truss
- 3. The top chord of a parallel truss is loaded in tension and the bottom chord is in compression.
- 4. The two most common trusses encountered at structure fires are the bowstring truss and the cathedral arch truss.
- A. Only statements 1 and 2
- B. Only statements 1, 3 and 4
- C. Only statements 1, 2 and 3
- D. Statements 1, 2, 3, and 4

Keyed Answer: A

### **RESOURCE:**

The Art of Reading Buildings, Fire Engineering Books, 2015; Chapter 3, Page 35

### **ALLOCATION OF ANSWERS:**

A-13; B-0; C-2; D-0

### **GROUNDS OF APPEAL:**

The keyed answer is not correct. Another answer is correct and it should be allowed for credit instead of the keyed answer.

### **RELIEF SOUGHT:**

Uphold the appeal and overrule the answer key to reflect "C" as the correct answer.

### **VENDOR RESPONSE:**

#### **Instructions:**

Questions 18 through 34 were taken from <u>The Art of Reading Buildings</u>, Fire Engineering Books, 2015. ISBN-13: 978-1593703424. Select the best answer for questions 18 through 34 based <u>solely</u> upon the material presented in this source.

### Pertinent Text: Pg. 35

The question is looking for <u>correct</u> statements regarding trusses. Statements 1 and 2 are written verbatim from the text on page 35.

Statements 3 and 4 were purposely written as incorrect statements. The correct version of statement #3 is located in the last paragraph of page 35.

The correct version of statement #4 comes from the bottom statement on page 36.

The test taker argues that having the word "most" in statement #4 alters the significance of the statement. The word "most" is irrelevant to the statement because it is a **false** statement either way.

The only correct answer to question #20 is answer A. – Only statements 1 and 2

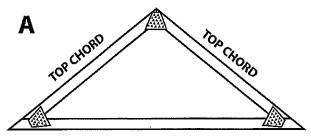
	1	APPEAL OF PRO	MOTIONAL EXAMINATION QUESTION
Jame:	hris	Rodgers	Date: 4-13-2023
elieve is wro	ng with		orm for each question that you wish to appeal. State clearly what you wide a reason for your belief. Please type or write legibly. If additional e.
DATE OF EX	XAM:	4-12-2013	TEST RANK: Lieurenant QUESTION # 20
			RENCE BOOK: The Art of Reading Buildings
			ne of the following and explain fully below)
		nswer is not correct. 1swer. My answer is	Another answer is correct and it should be allowed for credit <b>instead</b> of
		swer is also correct, <u>i</u> answer is	in addition, to the keyed answer. Both answers should be allowed for
	questio inated.		here is no correct answer among the choices. The question should be
Othe	r:		
"MOS" Statem	T	common.	4th statement is valid due to the tion on the addition of the words It alters the significance of the
		/	× 2
			e on back of this form if needed.

Item 8.

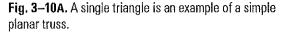
design of a truss is rather simplistic and has been used in this country since the early 1800s. The basic concept of the truss is not new, but the materials that are currently being used in its construction *are* new as heavy timbers have been replaced with lightweight wood and/or metal structural members. This has resulted in a significant change within the building industry and has dramatically changed how many buildings burn and fail when exposed to heat and/or fire. Because truss construction has, in many instances, become the norm for many structural applications, let's take a quick look at the concept of a truss.

A truss is nothing more than a structure that consists of one or more triangles formed by straight members whose ends are connected at joints that are referred to as nodes. The triangular configuration is the key to the success of a truss as the structural stability of the triangular design/shape is the simplest geometric figure that will not change shape when subjected to a load if the lengths of the sides of a truss are fixed to retain its shape. Remember, the strength of a beam is greatly enhanced by depth-the distance between the top and bottom chords. Interestingly, it is the depth of a truss (or the distance between the upper and lower chords) that also results in an efficient structural design. However, because the perimeter of a triangle is an inherently strong shape, it also results in a hollow center. As a comparison, a solid beam of equal strength would result in a substantial increase in weight, size, and cost-hence the popularity of modern lightweight truss construction.

The simplest form of a truss is a *planar truss*, which is a single triangle and is comprised of a bottom chord and two top chords (fig. 3–10A). In this form, the two top chords are in tension and the bottom chord is in compression. Triangles (or other hollow shapes) are labeled as *open web*. Common modifications that are used to increase load capacities and design configurations of a planar truss configuration are to add diagonal and vertical members within the triangular shape. These members are referred to as *truss web members*. A simple example of a truss with a single web member is called a *king post truss*, which consists of two angled supports that intersect a common vertical support (fig. 3–10B) that is joined to the bottom chord.



BOTTOM CHORD



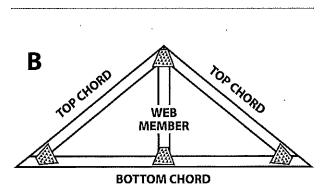


Fig. 3–10B. When a single web member is added to a planar truss, it becomes a king post truss.

Trusses can be built in many configurations using a multitude of materials and shapes—and with that another set of terms:

- **Triangular truss:** The most common type of truss used to form a peaked roof.
- Parallel chord truss: A parallel chord truss is one in which the top and bottom chords run in the same plane. Parallel chord trusses can be engineered where just the top chord is attached to the support (column/other beam) or traditionally resting on the bottom chord. The top chord of a parallel truss is loaded in compression and the bottom cord in tension. Parallel chord trusses can be manufactured using wood; metal, or a combination of wood and metal. The term bar truss (or bar joist) refers to steel

35

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parallel chord truss assembled with angle iron for the chords and cold-drawn round billet for the web. The pieces are tack-welded together to form the truss unit (fig. 3–11).

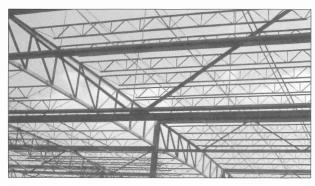


Fig. 3–11. Metal bar joist trusses

- Arched truss: An arched truss is one where the top chord is arched and the bottom chord is straight (horizontal). Arched trusses are often called bowstring trusses, which could be confusing when understanding how arched trusses fail. Arched trusses can transfer loads to columns in multiple ways, which help us better label the type of arched truss you may be dealing with at a structure fire. Arched trusses can be labeled as rigid arch or bowstring.
- **Rigid arch truss:** Also known as a *rib arch truss*, a rigid arch truss has a curved, selfsupporting top chord (not tied by the bottom chord) and horizontal bottom chord along with web members that are all rigidly connected. The load of the truss is delivered axially downward through the bottom chord and onto support walls or columns. These trusses can be constructed with steel or heavy timber—the latter creating a very tough roof with predictable fire reaction.
- **Bowstring truss:** A tied truss with an arched upper chord and a horizontal tension bottom chord that connects the ends of the arched cord, creating compression in the top chord. Diagonal web members are added to help transfer loads. The top chord of the truss abuts to the support wall or column. A true bowstring truss typically requires buttresses or

pilasters for masonry walls to help accept the lateral forces that may be developed as the live loads are gained or lost on the roof.

Other types of arched roofs exist—namely tiedarch and lamella—but they are not true trusses. These are covered in chapter 8.

Fire service texts don't always agree on these descriptions and labels for arched trusses; they are presented here in a way that helps the fire officers determine how an arched roof will fail and the potential for roof and wall collapse. We include a section titled "Historical Perspective on Arched Trusses" to help dissect the terminology enigma. Additionally, figure 3–12 shows how each of the arched trusses are supported and the forces are created.

### **Quick summary**

- Beams are structural elements that deliver a load perpendicularly to its imposed load.
- The distance between the top and bottom of a beam dictates the amount of load it can carry.
- Beams can be classified by use, shape, arrangement, and/or materials used.
- Lintels are used to span an opening in a loadbearing wall and can be made from wood, steel, concrete, or stone.
- A truss is a type of beam that uses geometric shapes to form an open web, and is nothing more than a structural element that consists of one or more triangles.
- The hollow shape of a triangle is referred to as open web.
- Geometrically configured trusses have largely replaced sawn lumber when used as structural members.
- Two common arched trusses that can be encountered at structure fires are the rigid arch truss and the bowstring truss.



## CITY OF GRAND PRAIRIE COMMUNICATION

<b>MEETING DATE:</b>	04/28/2023
PRESENTER:	Lisa Norris, Civil Service Director
TITLE:	Consider and rule upon the appeals for test question #24 of the Fire Lieutenant promotional examination administered on April 12, 2023
APPELLANT:	Karim Allen

**RECOMMENDED ACTION:** Uphold or Deny the appeal and Modify the answer key if appropriate

### **QUESTION:**

- 24. Floor joists can be supported by which of the following?
  - 1. Joist Pockets
  - 2. Ledger/ribbon boards
  - 3. Headers
  - 4. Metal hangers
  - A. Only statements 1, 2, and 4
  - B. Only statements 2, 3 and 4
  - C. Only statements 2 and 4
  - D. Statements 1, 2, 3, and 4

Keyed Answer: A

### **RESOURCE:**

The Art of Reading Buildings, Fire Engineering Books, 2015; Chapter 7, Page 149

### **ALLOCATION OF ANSWERS:**

**A-10**; B-1; C-2; D-2

### **GROUNDS OF APPEAL:**

Another answer is correct, in addition, to the keyed answer. Both answers should be allowed for credit.

### **RELIEF SOUGHT:**

Uphold the appeal and overrule the answer key to reflect answers "A" and "C" as correct.

### **VENDOR RESPONSE:**

### **Instructions:**

Questions 18 through 34 were taken from <u>The Art of Reading Buildings</u>, Fire Engineering Books, 2015. ISBN-13: 978-1593703424. Select the best answer for questions 18 through 34 based <u>solely</u> upon the material presented in this source.

### Pertinent Text: Pg. 149

The question is taken from the Quick Summary on page 149 and the statements 1, 2, and 4 are verbatim from the text.

### The correct answer is A.--- Only statements 1, 2, and 4

The test taker is arguing that "joist pockets" are called other names in the text. Figure 3-13 is referring to the insertion of wood floor beams into gravity wall pockets cut into a masonry wall. On page 147 it explains that "Prior to the 1940's, dimensional joists were anchored by inserting their ends into pockets or cavities in unreinforced masonry construction or resting on ribbon boards in balloon frame construction". The point being, terminology changes over time. In the 1940's they were called pockets or cavities and in modern construction, they are called joist pockets. It makes sense that the author uses the term "joist pockets" since he is asking how you support a joist.

The test taker insinuates that I was trying to trick the test takers into putting down the wrong answer. I write every question with two purposes: to educate and to make each question as fair as possible.

### The correct answer to question #24 is answer A-- Only statements 1, 2, and 4

			Item 9.
	·	APPEAL OF PROMOTIONAL EXAMINATION QUESTION	
	Name:	Karim Allen Date: 4/13/23	
	believe i	JCTIONS: Please complete one form for each question that you wish to appeal. State clearly what you is wrong with the question and provide a reason for your belief. Please type or write legibly. If additional needed, go to the back of this page.	
	DATE C	DF EXAM: $4/12/23$ TEST RANK: Licutenant QUESTION # 24	
	REFERI	ENCE PAGES <u>PS. 149</u> REFERENCE BOOK: The ort of reading building s	
		I reason for objection: (Check one of the following and explain fully below)	
		The keyed answer is not correct. Another answer is correct and it should be allowed for credit <u>instead</u> of the keyed answer. My answer is	
5	U	Another answer is also correct, in addition, to the keyed answer. Both answers should be allowed for credit. My answer is $\underline{\mathcal{L}}_{-}$ .	
		The question is faulty because there is no correct answer among the choices. The question should be <u>eliminated.</u>	
		Other:	
	D		
		s(s) supporting your appeal:	
	Sectio	m. This is summarizing the "method to connect floors on ps. 147. In this	
	5 cchia	m. This is summarizing the "method to connect floors on ps. 147. In this in the author calls them "pockets or cavities (see fig 3-13). The word	
	<u> </u>	It pocket is not when going to fig 3-13 which is referenced the	
	qutho	or calls them a "wall pocket." In my opinion this lead to confision,	
		ns it appear that the feat maker may have tried to confuse the test taker	
		thinking the selection 1. Joist pocket was a mix up of words. Muctore, I	
	Select	ed the answer which included the romaining two correct answert. Since	
		"i dist pocket" and "wall pocket" are used to alwribe this construction answer choices ahoud be concet.	
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**Floor covering.** The covering that serves as a durable (and attractive) surface to protect the subfloor.

Although the floors of a building can provide a strong surface for conducting interior operations, they can have numerous fireground disadvantages:

- A primary disadvantage of floors is that they can be constructed from either conventional or lightweight materials. Subfloors are typically made from either  $1 \times 6$  in. sheathing (older construction) or plywood/OSB of <sup>3</sup>/<sub>4</sub> in. thickness or greater (newer construction) for stability and a secure feeling when walking on the floor. However, the same cannot be said for the structural members (floor joists) that support the subfloor.
- Older floor joist construction used dimensional sawn lumber (minimum of  $2 \times 6$  in.) or larger, depending on the age of the building and structural constraints. This provided a degree of resistance to fire before failure. However, in newer construction, the dimensional lumber of yesterday has been replaced by lightweight joists that typically consist of the venerable I-joists that will quickly fail when exposed to heat and/ or fire.
- The method used to connect floors to walls has varied widely over the years. Prior to the 1940s, dimensional joists were anchored by inserting their ends into pockets or cavities (see fig. 3–13) in unreinforced masonry construction or resting on ribbon boards in balloon frame construction. After this time frame, joists were normally supported by resting on the top of plates in platform construction. More recently, joists are often supported by resting in metal hangers (fig. 7–8). These metal hangers are (depending on the structural load) typically about 18 gauge (approximately 0.05 in. or 1.27 mm for galvanized steel) and can be inferior to the previous mentioned methods.



**Fig. 7–8.** Joists can be supported at their ends by thin metal hangers.

Buildings with multiple floors can present a significant problem, particularly if a building is on sloped ground that results in the appearance of different floor levels depending on which side the building is viewed. Depending on the layout of a building, it is possible to view a building from the front and quickly determine the number of floors, and then view the same building from the side and/or back and see additional floors that were not visible from the front of the building. This is one reason why it is important to view a building from as many sides as possible.

Although this can be easily solved during a 180° or 360° size-up, the important consideration is that all fireground personnel are aware of any variance within a particular structure, the designations(s) that are used for varying floor levels, and that all personnel are aware of the terminology for varying floor levels. If not, then it is possible for interior personnel to be on a different floor than was originally designated for their assignment. As an example, the older apartment building in figure 7–9 is on a corner of sloping ground. From the front of the building there are two stories, and from the back of the building there are three stories. In this case, if an incident commander was in the front of this building and wanted a company that was responding from the rear to enter the building on the second floor (as viewed from the front), the responding resources wou 48

FOUNDATIONS, FLOORS, CEILINGS, AND WALLS

### **Quick summary**

- Floors consist of four primary parts: supports, joists, subflooring, and floor covering.
- A primary disadvantage of floor joists is their potential diversity that is not readily apparent. They may be heavy timber, sawn lumber, lightweight truss construction, or engineered wood products.
- Floor joists can be supported by joist pockets, a ledger/ribbon board, a top plate, or metal hangers.
- When buildings are constructed on sloping ground, they can present dissimilar floor level designations from different sides of a building.
- It is imperative to identify buildings on sloping ground that present dissimilar floor levels from different sides of a building and ensure that appropriate resources are aware of the dissimilar levels.
- Most floor coverings are not considered structural, although they can add hazards
   like additional dead load and flammability/ toxicity issues.

## CEILINGS

Ceilings are interior overhead surfaces that are not normally structural components of a building, but primarily provide a finished look to a room and also to hide the area underneath a floor or the roof above. From an architectural viewpoint, ceilings are classified by their construction and/ or visible attributes such as cove ceilings, coffered ceilings, flat ceilings, and so on. However, from a fire service perspective, ceilings are either *directly fastened* to overhead floor or ceiling joists or are *suspended* and supported by overhead floor or roof structural members.

### **Directly fastened ceilings**

Directly fastened ceilings are most commonly characterized by lath and plaster materials, metal wire mesh, decorative tin, and drywall.

Lath and plaster. Lath and plaster ceilings (which are also known as plastering) were commonly used on older buildings, and drywall ceilings are typically used on more modern buildings. Historically, plaster was used on the interior of a building and stucco was used on the exterior, but both were typically made from lime and sand. In the latter part of the 19th century, Portland cement was added to the lime and sand mixture to improve durability.

To construct a lath and plaster ceiling (which is the same process as used on interior walls), wooden slat laths are nailed to ceiling joists with a slight gap between the laths. These materials are then covered with three layers of plaster: a rough base coat known as a scratch coat, then a brown coat, and finally a finish coat. Although this process results in ceilings that are relatively strong, durable, and have a better fire resistance than many modern materials, the costs associated with installation and labor when compared to modern methods ultimately caused them to be replaced by sheets of drywall.

A lath and plaster ceiling can be considered a relatively strong ceiling as compared to modern drywall ceilings and has a better fire resistive rating than drywall (particularly ½ in.). As an example, the ceiling in figure 7–11 was subjected to heavy fire and is still somewhat intact. Lath and plaster ceilings can absorb more water before collapsing than drywall ceilings and they will typically collapse in smaller sections than drywall ceilings. However, lath and plaster ceilings are a bit more difficult to pull with a pike pole, hook, or other similar tool as compared to drywall ceilings.

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## CITY OF GRAND PRAIRIE COMMUNICATION

MEETING DATE:	04/28/2023
PRESENTER:	Lisa Norris, Civil Service Director
TITLE:	Consider and rule upon the appeals for test question #34 of the Fire Lieutenant promotional examination administered on April 12, 2023
APPELLANT:	Alan Schroeder
<b>RECOMMENDED ACTION:</b>	Uphold or Deny the appeal and Modify the answer key if appropriate

### **QUESTION:**

- 34. When at a fire in a single-story public storage facility constructed of lightweight metal frame construction with plywood materials and/or corrugated metal siding, the primary hazard is
  - A. the possibility of getting locked in a self-locking storage unit
  - B. rapid structural collapse
  - C. the variety of unknown contents within the storage units
  - D. horizontal flame spread through the common attic

Keyed Answer: C

#### **RESOURCE:**

The Art of Reading Buildings, Fire Engineering Books, 2015; Chapter 11, Page 355-356

### **ALLOCATION OF ANSWERS:**

A-0; B-3; C-10; D-2

#### **GROUNDS OF APPEAL:**

Another answer is correct in addition to the keyed answer.

### **RELIEF SOUGHT:**

Uphold the appeal and overrule the answer key to reflect answers "C" and "D" as correct.

#### **VENDOR RESPONSE:**

#### **Instructions:**

Questions 18 through 34 were taken from <u>The Art of Reading Buildings</u>, Fire Engineering Books, 2015. ISBN-13: 978-1593703424. Select the best answer for questions 18 through 34 based <u>solely</u> upon the material presented in this source.

#### Pertinent Text: Pg. 355-356

#### Page 356: SPECIFIC HAZARDS

• <u>The primary hazard comes from the variety of unknown contents</u> that can vary widely, including flammable materials, hazardous materials, ammunition, and anything else that renters would want to store in a secure location. Illegal disposal of chemicals and waste has been found in storage units.

The author mentions other tactical concerns and hazards, but he very clearly states that he feels the **primary hazard** is the variety of unknown contents within the storage units.

The question is specifically asking for the **primary** hazard.

The only correct answer for question #34 is answer "C". — the variety of unknown contents within the storage units

APPEAL OF PROMOTIONAL EXAMINATION QUESTION	Item 10
Name: <u>Alan Schruedur</u> Date: <u>4-13-23</u>	
INSTRUCTIONS: Please complete one form for each question that you wish to appeal. State clearly what you believe is wrong with the question and provide a reason for your belief. Please type or write legibly. If addition space is needed, go to the back of this page.	
DATE OF EXAM: 4/12/23 TEST RANK: Lt QUESTION #	34
DATE OF EXAM: <u>4/12/23</u> TEST RANK: <u>Lt</u> QUESTION # REFERENCE PAGES 355-356 REFERENCE BOOK: The Art of Reading Buildings	
General reason for objection: (Check one of the following and explain fully below)	
The keyed answer is not correct. Another answer is correct and it should be allowed for credit <u>instead</u> the keyed answer. My answer is	<u>i</u> of
Another answer is also correct, in addition, to the keyed answer. Both answers should be allow credit. My answer is $\underline{D}_{\cdot}$ .	ed for
The question is faulty because there is no correct answer among the choices. The question show <u>eliminated.</u>	ıld be
Other:	
Reasons(s) supporting your appeal:	
Page 356 under "Flame Speen" - "the lave of Deparation Latth	u top)
Page 356 under "Flame Speed" - "the lack of Deparation (at the will easily allow fire spread between numerous units	
Answer D should also be excepted as correct.	
Continue on back of this form if needed.	5

## RAPID STREET-READ GUIDE

### BUILDING GROUP: Manufacturing/Warehouse—Public Storage—Single Story

### **BASIC CONSTRUCTION METHOD**

- There are three different types:
  Concrete block with
  - conventional or lightweight construction
  - Walls of wood frame with conventional and/or lightweight construction and plywood and/ or metal siding
  - Lightweight metal frame construction with plywood
  - materials and/or corrugated metal siding
- Concrete slab foundations

### **ERA CONSIDERATIONS**

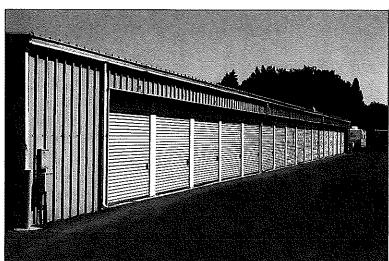
- Pre-1960 buildings are wood
- frame construction with wood siding.
- · Some use poured-in-place concrete and concrete block with light construction materials.
- Post-1960 buildings are typically concrete block and lightweight construction, metal interior/exterior, and wood exterior and lightweight interior construction.
- Wood/metal frame buildings typically have plywood type materials or metal panels for exterior walls.

### **EXTERIOR FEATURES**

- These buildings typically use minimal construction such as T-11 siding, metal studs, and/or lightweight construction.
- Some buildings were built with concrete block walls, but normally are of lightweight construction.
- Attached units are a single-story row of various lengths with secure doors of various sizes for each unit.
- · Locks on each door are the property of each renter.

### **INTERIOR FEATURES**

- Individual compartmentalized rooms of various sizes are used.
- Unknown contents will vary within each unit. Contents can consist of hazardous storage, such as ammunition, flammable items, and hazmat items.
- Partition walls between rented spaces may not go to the roof, leaving an open void that spans multiple individual units.



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Item 10.

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#### Item 10.

### **TACTICAL CONCERNS**

- **Fire Spread:** Rooms in common single-story buildings often use partition walls that do not travel from the foundation to the roof. This lack of separation (at the top) will easily allow fire spread between numerous units and can result in a fast spreading fire as well as weakening large sections of a lightweight roof. Partition walls are often made from drywall that will not resist fire for long periods. The type of fire is dependent on contents.
- **Collapse:** Collapse is dependent on the type of construction. Concrete block and conventional construction are not prone to rapid collapse and can offer a measurable amount of fire resistance. However, common single-story row buildings are often of minimal wood and/or metal construction and will be prone to early collapse, particularly the roof.
- **Ventilation:** Ventilation is limited as there is typically only one door per unit. Therefore, ventilation is limited to opening the access door to an involved unit, an operation that can be dangerous. Roof ventilation is not normally recommended due to a lack of substantial roof construction. When utilized, roof ventilation operations should be defensive (flank the burning area) as opposed to ventilating directly over the fire.
- **Forcible Entry:** Forcible entry is simplified by easy access to the door locks that are normally a single padlock. Although the locks are the property of the renter, their attachment to the door is not usually substantial and can be removed with conventional forcible entry methods.

Search: Search is not a primary concern as these buildings/units are principally used for storage.

### SPECIFIC HAZARDS

- The primary hazard comes from the variety of unknown contents that can vary widely, including flammable materials, hazardous materials, ammunition, and anything else that renters would want to store in a secure location. Illegal disposal of chemicals and waste has been found in storage units.
- These buildings can rapidly burn due to the common use of lightweight materials.
- Expect a common void between each unit at the top of the partition walls.
- These buildings are not usually sprinklered.
- Be careful of opening a door to an involved unit before adequate extinguishment operations.

MANF

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# CITY OF GRAND PRAIRIE COMMUNICATION

MEETING DATE:	04/28/2023
PRESENTER:	Lisa Norris, Civil Service Director
TITLE:	Consider and rule upon the appeals for test question #63 of the Fire Lieutenant promotional examination administered on April 12, 2023.
APPELLANT:	Chris Rodgers (active appeal); and Karim Allen (rescinded appeal)

**RECOMMENDED ACTION:** Uphold or Deny the appeal and Modify the answer key if appropriate

Karim Allen filed, and then subsequently rescinded, an appeal on this question, but it is included in this item for full transparency. Only consideration by the Commission is needed on Chris Rodgers appeal which is below.

### **QUESTION:**

63. Of the following "Basic Attack Rules of Thumb", which of the following statements is false?

- A. Generally, a hose stream will put out all the fire it can reach in 30 to 60 seconds.
- B. When you encounter multiple fires on the same floor, you must decide the location from which the line will be taken in. Work toward the biggest area of involvement first.
- C. Attack from the uninvolved area toward the area of involvement.
- D. Always attack the lowest fire in a structure first, then move upward. (ex. Extinguish a basement fire before you move to first floor.)

Keyed Answer: **D** 

### **RESOURCE:**

Incident Management for the Street-Smart Fire Officer, 2nd edition; Chapter 10, Page 110-111

### **ALLOCATION OF ANSWERS:**

A-5; B-2; C-1; **D-7** 

### **GROUNDS OF APPEAL:**

The question is faulty because there is no correct answer among the choices. The question should be eliminated.

### **RELIEF SOUGHT:**

Uphold the appeal and eliminate the question.

#### **VENDOR RESPONSE:**

#### **Instructions:**

Questions 52 through 68 were taken from <u>Incident Management for the Street-Smart Fire Officer</u>, 2<sup>nd</sup> ed. ISBN-13: 978-1593701505. Select the best answer for questions 52 through 68 based <u>solely</u> upon the material presented in this source.

#### Pertinent Text: Pg. 110-111

Statements A, B, and C are all verbatim from pages 110 and 111. They are all true statements.

The argument is that there are instances where statement "D" could be true. Yes, in specific instances, this is definitely what you would want to do. But, as the text points out, it is not **always** the case. The example given on page 111 states "The one area of concern here is a fire where the basement and the floor above are both involved. I don't recommend taking a hoseline down to fight a basement fire unless a backup line is in the stairway to the basement to ensure that a way out is always available". In another scenario, you may have to extinguish a small fire on the floor above just to be able to get down to the basement fire.

Statement D is a <u>false</u> statement. It states "Always attack the lowest fire in a structure first, then move upward".

There are many examples, including the one given on Pg. 111, that demonstrate <u>you do not always</u> <u>attack the lowest fire in a structure first.</u>

The only correct answer for question #63 is answer "D".

Item	11.	

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### APPEAL OF PROMOTIONAL EXAMINATION QUESTION

Name	: Chris Rodgers Date: 4-13-2023				
INSTR believe	INSTRUCTIONS: Please complete one form for each question that you wish to appeal. State clearly what you believe is wrong with the question and provide a reason for your belief. Please type or write legibly. If additional space is needed, go to the back of this page.				
DATE	OF EXAM: 4-12-2023 TEST RANK: Lievenent QUESTION # 63				
REFEI	RENCE PAGES 110-111 REFERENCE BOOK: Incident Monigement for the Street-Smort Fire Officer				
Gener	al reason for objection: (Check one of the following and explain fully below)				
	The keyed answer is not correct. Another answer is correct and it should be allowed for credit <b>instead</b> of the keyed answer. My answer is				
	Another answer is also correct, <u>in addition</u> , to the keyed answer. Both answers should be allowed for credit. My answer is				
X	The question is faulty because there is no correct answer among the choices. The question should be <u>eliminated.</u>				
	Other:				
Reason	ns(s) supporting your appeal:				
  	the text it Joes not make "D" a false statement. The neept of attacking the lowest level possible remains true en to include basement fires. It would be false to tenguish the first floor before moving to the besement within a context of this source.				
	Continue on back of this form if needed.				

Name:       Karim Allen       Date: 4/13/93         INSTRUCTIONS: Please complete one form for each question that you wish to appeal. State clearly what you believe is wrong with the question and provide a reason for your belief. Please type or write legibly. If additional space is needed, go to the back of this page.         DATE OF EXAM:       4/12/23       TEST RANK: Licoheart       QUESTION # 63         REFERENCE PAGES       100-111       REFERENCE BOOK:       Incident Mongement for the itreet is         General reason for objection:       (Check one of the following and explain fully below)       Image: Check of the iteration of the keyed answer is not correct. Another answer is correct and it should be allowed for credit instead of the keyed answer is also correct, in addition, to the keyed answer. Both answers should be allowed for credit. My answer is	
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eliminated. Other:	r
	e
Reasons(s) supporting your appeal:	-
The Keyed correct onswer states, " attack the lowest fire in a structure first, then more upward." In the referenced page number it says in the title, " fires on multiple Floors, start at the lowest level possible." Both takements are saying the same thing in my opinion. Furthermore, nothing in the referenced section staker not to " extinguish a barmont fire perfore" it only says to have a "back-up line." In my opinion there	
is not on item that is false in the answer choices siven.	

tinue on back of this form if needed.

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## Attack from the uninvolved area toward the area of involvement

Another way to say this is if the fire is in front, attack from the rear, and if the fire is in the rear, attack the front (fig. 10-6). This helps two ways. First, it diminishes the spread of fire throughout the building (this is the confine in confine, control, and extinguish). A hose stream, even a straight stream, can push a lot of fire around. It pushes heat and smoke away from the advancing nozzle. The second way it helps is if fire is between you and savable victims, you could be pushing heat, flame and smoke toward them. This will eventually diminish their survivability. For example, say the fire is in the living room. The occupants started to exit to the kitchen and passed out from the smoke or lack of oxygen. A line taken into the front door has the possibility of pushing heat, flame, and smoke onto or assuredly over the victim. If, however, the line had been taken in the rear of the house into the kitchen, we probably would have stumbled onto the victim and avoided the possibility of steaming the victim to death. If the fire is on the second floor or higher of the two-story house, I have found that the quickest way to the structure works the best—usually that would be the front door. In most homes, stairs to the second floor are off of or connected to the living room.

### Generally, a hose stream will put out all the fire it can reach in 30 to 60 seconds

If you are at the top of the stairway and have a line directing water into a well-involved second floor, and you don't darken down the fire within 30 to 60 seconds— then get more water. I have observed companies work a hoseline for many minutes at a time and not be able to advance or darken down the fire. The objective of every hose stream should be to advance. There are only three reasons why a hoseline can't be advanced: (1) There's no more line to advance. You can only pull a 150-foot bank of hose 150 feet. That doesn't account for turns, corners, and kinks. (2) You physically don't have the resources to advance the hose. A two-person crew may experience difficulty stretching a 1<sup>34</sup>-inch line upstairs and getting around corners by themselves. (3) You can't advance due to the heat. As it relates to number 3, you need water power to push back the fire power. If the fire is eating up everything you're throwing at it and still pushing down on you, then you don't have enough water.

## Notify command prior to changing your floor of operation

One of the cardinal rules of firefighting is to keep command informed. Commandexpects to see certain things after making assignments. (There are also certain things the IC does not expect to see after making assignments.) As discussed earlier in this book, command is responsible for knowing the location and function of every crew of the fireground. Company officers are responsible for making sure command knows their specific location and function. Always tell command where you are.

Item 11.

## For multiple fires on the same floor, bigger is first

When you encounter multiple fires on the same floor, you must first decide the location from which the line will be taken in. Work toward the biggest area of involvement first. Command should have already assigned crews as backup to watch your back.

### When you encounter fires on multiple floors, start at the lowest level possible without being cut off from your means of egress

With a fire on the first and second floor of the two-story home, hopefully it is obvious that you would attack the first-floor fire prior to going up to work the fire on the second floor. The one area of concern here is a fire where the basement and floor above are involved. I don't recommend taking a hoseline down to fight a basement fire unless a backup line is in the stairway to the basement to ensure that a way out is always available. Remember, fire moves toward oxygen, and heat and gases flow from areas of high pressure to areas of low pressure-in this case, to the side or basement door. If the attack crew takes a line downstairs, fire (especially on the upper floor) will move toward the open basement door. If there is no backup line at the top of the basement stairs, then fire may cut off the only means of egress for the crew in the basement.

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## If you encounter opposing lines—bigger is better

If you pull a 1<sup>3</sup>/<sub>4</sub>-inch line through the front door and another crew pulls a 2<sup>1</sup>/<sub>2</sub>-inch line in the rear, you lose!

### Big fire, big water

I realize this is an old cliché but it bears mentioning. Just as "Don't go to a gun fight with a knife" is sometimes appropriate, so is "big fire—big water. We all too often hear of initial operations at fires where the gallons per minute provided were too inadequate for the amount of fire. Remember the NFA's fire flow formula and then flow a little extra for luck.

### Switch plans, if necessary

If you've tried something, and conditions don't seem to be improving, try something else. Go to Plan B. We used to have a chief that would pull crews from inside a building if something didn't look or feel right, or if he didn't think they were getting it. Outside, they would discuss it and go back in and try something else. Try that for a second, and if that doesn't work, go to Plan C.



## CITY OF GRAND PRAIRIE COMMUNICATION

MEETING DATE:	04/28/2023
PRESENTER:	Lisa Norris, Civil Service Director
TITLE:	Consider and rule upon the appeals for test question #73 of the Fire Lieutenant promotional examination administered on April 12, 2023
APPELLANT:	Brian Gregory
<b>RECOMMENDED ACTION:</b>	Uphold or Deny the appeal and Modify the answer key if appropriate

### QUESTION:

- 73. There are several built-in weaknesses to modular construction that firefighters must be aware of in order to understand how fire spreads and develop appropriate strategies and tactics. Which of the following are examples of these built-in weaknesses?
  - 1. There are built-in access points for the crane to lift the modules into place which provide an avenue for fire spread.
  - 2. Fire can spread due to ceiling adhesive failure.
  - 3. The construction type results in a sizeable void between the first-floor ceiling and the second-floor sub-flooring materials.
  - 4. The builder hires the inspector and only the following inspections are completed at the homesite: foundation, set, wiring and plumbing final only, and a finish inspection.
    - A. Only statements 1, 2, and 3
    - B. Only statements 2 and 3
    - C. Only statements 1, 3, and 4
    - D. Statements 1, 2, 3, and 4

### Keyed Answer: **D**

### **RESOURCE:**

House Fires, Fire Engineering Books, 2019; Chapter 2, Page 37-40

### **ALLOCATION OF ANSWERS:**

A-5; B-1; C-1; **D-8** 

### **GROUNDS OF APPEAL:**

The keyed answer is not correct. Another answer is correct and it should be allowed for credit instead of the keyed answer.

### **RELIEF SOUGHT:**

Uphold the appeal and overrule the answer key to reflect "A" as the correct answer.

### **VENDOR RESPONSE:**

#### **Instructions:**

Questions 69 through 85 were taken from <u>House Fires</u>, Fire Engineering Books, 2019. ISBN-13: 978-1593704124. Select the best answer for questions 69 through 85 based <u>solely</u> upon the material presented in this source.

### Pertinent Text: Pg. 37-40

### There is no argument that statements 1, 2, and 3 are correct.

The argument is whether statement 4 is a correct statement. The text on page 41 states "For modular construction, only the following inspections are completed at the homesite: foundation, set, wiring, and plumbing final only, and a finish inspection".

The difference between the statement from page 41 and statement #4 is "The builder hires the inspector". The book does not state that the builder hires the inspector for inspections conducted at the homesite.

Since the rest of statement 4 is verbatim from the book and due to not being able to prove that statement 4 is correct or false, I recommend the following:

### I recommend that both answers A and D be accepted as correct answers.

	APPEAL OF PROMOTIONAL EXAMINATION QUESTION	Item 12
Name	e: BRIAN GREGORY Date: 4-17-23	_
space i	RUCTIONS: Please complete one form for each question that you wish to appeal. State clearly what you is wrong with the question and provide a reason for your belief. Please type or write legibly. If additional s needed, go to the back of this page.	
DATE	OF EXAM: $4 - 12 - 23$ TEST RANK: $27$ QUESTION # 73 RENCE PAGES 37-90 REFERENCE BOOK: $\frac{1}{0005}$ FIRES	
REFEF	RENCE PAGES <u>37-90</u> REFERENCE BOOK: <u>HOUSE FILES</u>	
	al reason for objection: (Check one of the following and explain fully below)	
X	The keyed answer is not correct. Another answer is correct and it should be allowed for credit <u>instead</u> of the keyed answer. My answer is $\underline{A}$ .	
	Another answer is also correct, <b>in addition</b> , to the keyed answer. Both answers should be allowed for credit. My answer is	
	The question is faulty because there is no correct answer among the choices. The question should be <u>eliminated.</u>	
	Other:	
P		

### Reasons(s) supporting your appeal:

THE KEYED ANSWER INCLUDED "THE BUILDER HILES THE INSPECTOR AND ONLY THE FOLLOWING INSPECTIONS ARE COMPLETED AT THE HOMESITE: FOLLMARTION, SET, WIRING AND PLUMBENG FINAL ONLY, AND A FINISH INSPECTION." IN THE BOOK IT STATES THAT THE MANUFACTOR HOME BUILDER HILE 3<sup>RD</sup> PARTY INSPECTORS TO PROVIDE ON-SITE INSPECTIONS DURING THE CONSTRUCTION PHASE AT THE FACTORIES. THE BOOK DOES NOT STATE THAT THE HILD INSPECTORS BY THE MANUFACTURED HOME BUILDER ALE THE ONES THAT CONDUCT THE HOMESITE INSPECTIONS. THEREFORE #44 SHOULD NOT BE A THUE STATEMENT AND ONLY OPTIONS 1,2,3 ARE TRUE, THUS MAKING THE CORRECT ANSWER CHOICE "A".

Continue on back of this form if needed.

braced. They are transported to the site on a trailer and offloaded or the wheels and hitches are removed and the units are set in place with a crane, creating some of the confusion. Originally regulated as vehicles, they were not required to comply with housing regulations. Federal regulations have increased the safety of this type of construction with the Federal National Manufactured Housing Construction and Safety Standards Act of 1974.

**Prefabricated.** Prefabricated homes in the traditional sense were "kit homes," where the lumber arrived precut and labeled for its location. In a modern sense, prefabs are often called panelized homes, because the walls are constructed in a factory and shipped flat to the jobsite. Set on traditional foundations, the construction of wall units into panels instead of whole sections allows the walls to be "stood up" in place, reducing build time and cost.

Some panelized construction options deliver panels with the siding and interior wall finishes already completed, providing savings over stick-built homes. (Stick-built refers to the construction method where the lumber is delivered, hand sawn on-site and each stud, rafter, and beam is nailed in place individually, stick by stick.)

Implications for the fire service. The data reported by the manufactured homes industry indicate that manufactured and modular home sales are on the rise nationally. If this is the case, how can we wait to reevaluate our current policies and procedures before adjusting our attack plan for these structures? If modulars and manufactured homes are the new up-and-coming construction method, then it is our responsibility, in a book on modern house fires, to document that trend and provide information on its implications. Deputy Chief (retired) Vincent Dunn (FDNY) wrote for years about the hazards of truss construction while as a group the fire service was burying our own without listening. We feel that is unacceptable and should not be repeated for manufactured homes. Look for these homes in your area and investigate their potential and share your wisdom by publishing your experiences and around the kitchen table in the firehouse.

**Modular homes.** Modular homes are manufactured in a facility, delivered to the jobsite, and set with a crane. The homes' sections are complete and finished inside and out. Interior walls are finish painted and exterior siding and roofing are applied at the plant. Floor plans and number of sections are determined by the customer's design. The engineering of these homes allows for the separate construction of each section and a crew of workers to build the sections under controlled conditions. When the homes are delivered to the site, the plumbing and electrical connections between sections and any finishing work between the "marriage walls" (walls between the sections) is completed: the exterior siding

that spans the sections will be applied and interior accordant trim will complete the "marriage."

Though the end product may look like a Cape Cod or raised ranch or contemporary, the construction methods used to create these homes may provide new avenues of fire spread. Work with your local building officials and code enforcement officers to visit these sites during the construction phase. In your career, you've probably learned a lot about construction by looking at a building when the walls are open; you'll need to look a lot harder to learn about them when the walls arrive closed!

The information contained in this section is from a 2010 FDIC presentation by Chief Kevin A. Gallagher, Acushnet Fire Department (MA). We are grateful for his willingness to share this lifesaving information, which is used here with his permission.

*Construction method.* As the name implies, these types of homes are prefabricated. Tradesmen work in an assembly line–fashion building modules (often in 25% increments of the house), which are transported to the site (fig. 2–86). The on-site builder constructs the foundation, assembles the modules, and connects the utilities (fig. 2–87). From the outside, it is impossible to determine if the construction method is modular (figs. 2–88, 2–89, and 2–90).

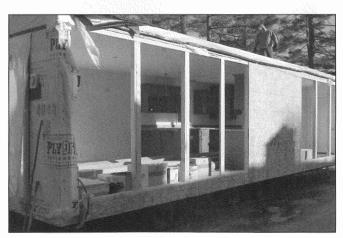


Fig. 2–86. The modules arrive on a truck. Courtesy of Kevin Gallagher.



**Fig. 2–87.** A crane picks the module and mates it to the foundation or the top of another module. Courtesy of Kevin Gallagher.



Fig. 2–88. This home is an example of modular construction. Courtesy of Kevin Gallagher.

Construction, Types of Houses, and Floor Plans

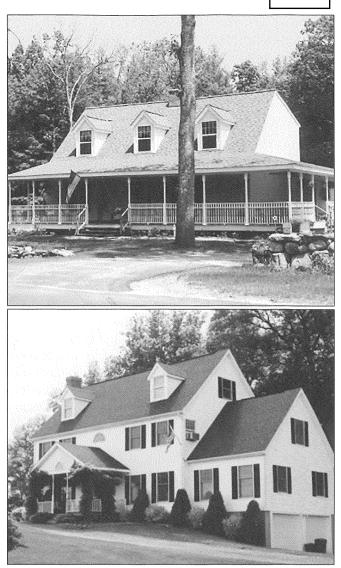


Fig. 2–89. and Fig. 2–90. Other examples of different modular home styles. Courtesy of Kevin Gallagher.

*Advantages over stick-built homes.* Modular homes have several advantages over other types of construction:

- 1. Cost is reduced by 6%-15%.
- 2. Framing is strong enough to be shipped over the road and lifted into place by a crane.
- 3. Rapid on-site assembly time, often 1–2 days, with a finished project completed in a few weeks.
- 4. Affordable.
- 5. The designs are customizable.
- 6. The time taken by local inspection is reduced (preinspections are done at factory).

*Built-in hazards.* There are several built-in weaknesses to modular construction that firefighters must be aware of in order to understand how fire spreads and develop appropriate strategies and tactics (fig. 2–91). It is also vital to

understand how quickly fire will spread to prevent firefighters from becoming involved in collapse or falling through fire-weakened floors.



Fig. 2–91. Modular fire

*Void between floors.* As a direct result of the type of construction, there is an approximately 21 in. high void between the first-floor ceiling (sheetrock) and the second-floor subflooring material. When a room-and-contents fire gets into this void, it has the full run of the house. Chief Gallagher refers to this as horizontal balloon framing (figs. 2–92, 2–93, and 2–94).

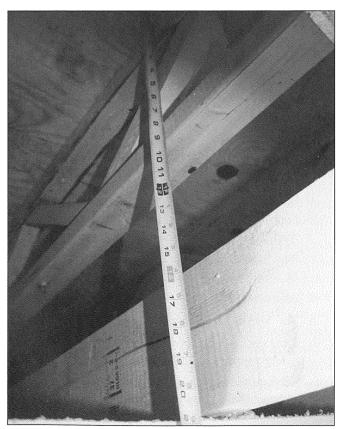


Fig. 2–92. Void space from the first-floor ceiling up to the second-floor subfloor. Courtesy of Kevin Gallagher.

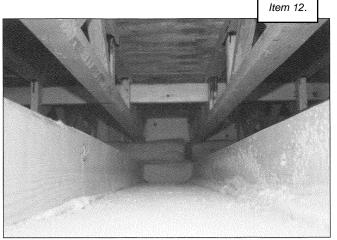


Fig. 2–93. Another view of the void space. Courtesy of Kevin Gallagher.

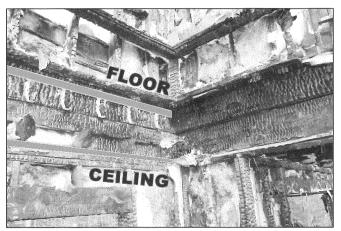


Fig. 2–94. Void space from an actual fire in a modular home. Note that the first-floor ceiling joists and the second-floor trusses have burned away due to the intensity of the fire that was in this space. Courtesy of Kevin Gallagher.

*Fire spread due to ceiling adhesive failure.* Further complicating a fire in the void space is how it got there in the first place. Figure 2–95 shows the adhesive holding the sheetrock to the ceiling of the first floor. There are no nails or screws (mechanical fasteners) holding the sheetrock up. This eliminates the chance for nail pops during transport and construction. The building code allows for deviations like this if they have been successfully evaluated. Unfortunately there is no standard for the glue to be heat resistant. Tests have shown that the adhesive starts to lose its strength and fail quickly, causing the sheetrock to fall and exposing the huge void space to the room-and-contents fire (fig. 2–96).

*Crane lift points and fire spread.* There are built-in access points for the crane to lift the modules into place (figs. 2–97 and 2–98). These provide another avenue for fire spread. Fire now has access to the void space between floors from an exterior fire or access to the outside of the building from a fire in the void space (fig. 2–99).

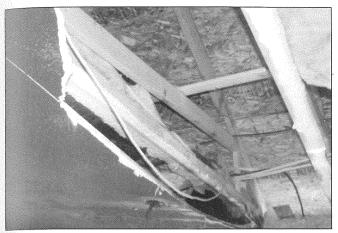


Fig. 2–95. A contents fire has caused the adhesive to begin to fail. Courtesy of Kevin Gallagher.



Fig. 2–96. At this fire in Acushnet (MA), investigators determined that failure of the ceiling caused by direct flame impingement on the adhesive led to catastrophic fire spread. Courtesy of Kevin Gallagher.

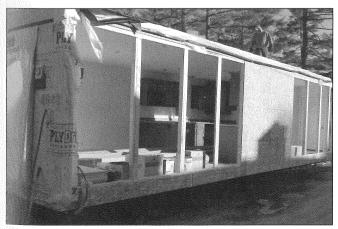


Fig. 2–97. Boxes being lifted. Courtesy of Kevin Gallagher.

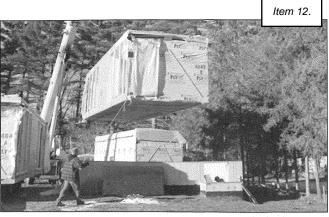
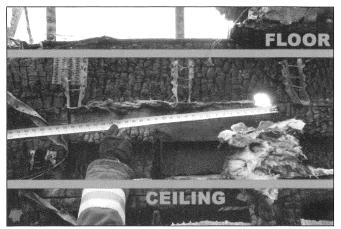


Fig. 2–98. This crane lift point is another easy avenue for fire spread in modular homes. Courtesy of Kevin Gallagher.



**Fig. 2–99.** Investigators determined that the lift point helped spread the fire in this case. When properly installed, these holes can be sealed using the materials provided by the manufacturer and the hazard reduced. Courtesy of Kevin Gallagher.

*Fire spread in marriage walls.* Modules have to be built strong enough to withstand transport and placement. Consequently, they essentially are almost completely rectangular boxes. The walls from each box meet, depending on their exact location and design, and form what is called a marriage wall. There are small void spaces at these marriage walls, again providing a great place for fire to spread or burn undetected for periods of time (figs. 2–100 and 2–101).

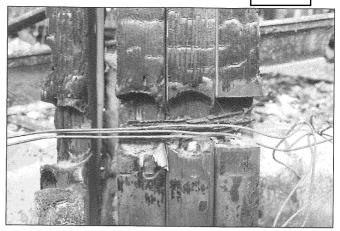


**Fig. 2–100.** A typical marriage wall between modules with obvious space for fire spread. Courtesy of Kevin Gallagher.



**Fig. 2–101.** Fire has spread throughout the structure via the void space between the modular units. Courtesy of Kevin Gallagher.

*Wiring.* Another characteristic of modular homes is that the wiring may be notched into the outside of the studs (fig. 2–102). Firefighters may not expect wires in these locations and be subjected to dangerous electrical shocks. Wires placed like this also allow fire to run the perimeter of the home for the length of the wire.



**Fig. 2–102.** In a typical house, you would not expect to find wiring run through the exterior studs, as was the case in this modular home. Courtesy of Kevin Gallagher.

*Lightweight materials.* Although designs vary, floors may be supported by lightweight trusses or engineered joists (fig. 2–103). As we know, these fail rapidly when put under a fire load. Expect early collapse of these homes.



Fig. 2–103. A finger joint truss was used in this modular home to support the second floor. Courtesy of Kevin Gallagher.

There are no nails or even gusset plates in a finger joint. The webs and cords are held together by adhesive and the friction of the individual wood fingers at each connection. Note also the small dimension of the lumber (fig. 2–104).

*Roof construction.* To minimize cost, roof sections are prefabricated and simply tilted up at the jobsite. A cross member connects each side of the roof, providing some structural stability. Often there is no ridge pole (figs. 2–105 and 2–106).

Construction, Types of Houses, and Floor Plans

Item 12.



Fig. 2–104. Complete failure of lightweight structural members caused this home to become a death trap for both civilians and firefighters early in the fire. Courtesy of Kevin Gallagher.

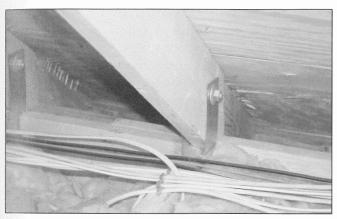


Fig. 2–105. A roof rafter is attached by a mechanical fastener that hinges flat during transport and can swing up at the homesite. This is an obvious structural weak point if attacked by fire.

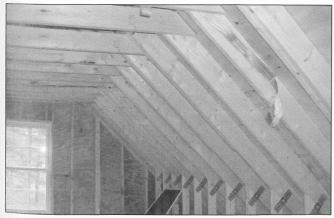


Fig. 2–106. A finished attic and roof framing assembly

*Building inspections.* In typical stick-built, on-site construction methods, a building inspector will conduct inspections at these phases of construction: foundation, sheathing, rough and finish electrical and plumbing, framing, and insulation, and a final inspection at completion. For modular construction, only the following inspections are completed at the homesite: foundation, set, wiring and plumbing final only, and a finish inspection.

Manufactured home builders hire third-party inspectors to provide on-site inspections during the construction phase at the factories. Note that the builder has hired the inspector, making the quality and quantity of the inspection suspect at best. Local building inspectors cannot see electrical, mechanical, or plumbing components because they are already covered with interior finish materials, which also limits the quality of the inspection.

*Strategy and tactics.* There are several aggressive steps you can do to prevent firefighter injury or loss of life.

- 1. Identify and preplan for fires in modular homes in your area (see the section in this chapter on STOP).
- 2. When responding to a modular home fire, conduct a very thorough size-up, including a 360 walk-around, and determine where and how far fire has extended in these buildings.
- 3. Be aggressive in the use of your TIC to find hidden fire in voids.
- 4. Keep an eye on the clock and expect early collapse and fire-weakened floors.
- 5. Expect ceiling failure in a room-and-contents fire.
- 6. Be aware of the potential for electrical fires in marriage or partition walls.
- 7. Be aggressive during searches for hidden fire during the fire suppression and during overhaul.

As you can see, it is essential to have in-depth knowledge of building construction, floor plans, and overall home designs long before the fire starts. This preincident intelligence is essential to your survival.

### References

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- Avillo, Anthony. 2015. *Fireground Strategies*. 3rd ed. Tulsa, OK: PennWell.
- Brannigan, Francis. 1997. *Building Construction for the Fire Service*. 4th ed. Quincy, MA: National Fire Protection Association.
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### CITY OF GRAND PRAIRIE COMMUNICATION

<b>MEETING DATE:</b>	04/28/2023
PRESENTER:	Lisa Norris, Civil Service Director
TITLE:	Consider and Rule Upon the Appeals for Grading of the Lieutenant Promotional Exam for Taylor Rosier Administered on April 12, 2023
APPELLANT:	Fire Engineer Taylor Rosier
<b>RECOMMENDED ACTION</b>	: Uphold or Deny the Appeal

### **SUMMARY:**

On April 12, 2023, the Lieutenant promotional examination was administered to qualified fire personnel. Immediately following the exam, the exams were scored in the presence of those wishing to observe.

The exam answer sheet was in the form of a scantron. The machine used to read the scantron was the same machine which was used to score all four of the Fire Department promotional exams which were scheduled for April 11, 2023 and April 12, 2023 (70 exams total). Prior to being used to grade the exams, the machine was calibrated and tested to confirm it was functioning properly. There were no incidents when the exams were being graded by the machine.

The following day each person's promotional examination and answers, the examination grading, and the source material for the examination were made available to the candidates to review. Although the established practice is to provide candidates with a copy of their promotional examination and answers for review, candidates who came to view their exams on or before approximately 9:00 a.m. on April 14, 2023 were inadvertently provided their original exam scantrons to review. Copies of the original scantrons were not made prior to the originals being provided to the candidates. The review of the exams occurred in a room which was not equipped with a video recording device. During the review, normally a Human Resources staff member is present in the room. There was a brief moment Arselia had to step out to catch Euriah, but she asked a person to stand at the window on the outside of the room looking in and returned quickly. While staff members are in the room, they cannot attest that their eyes were focused on a particular candidate at all times.

On April 14, 2023, at 8:00 a.m. Fire Engineer Rosier came to review his exam. Initially, he was the only person reviewing the exam at that time, and he was in the room alone with Human Resources staff member Arselia Fuentes. At approximately 8:06 a.m., other members of the fire department arrived to review their exams. Shortly after the arrival of other fire personnel, Fire

Engineer Rosier stated that his exam had been scored incorrectly in that he had selected the correct answers for questions 58 and 62, but they were scored as being incorrect.

After receiving the scantron back from Fire Engineer Rosier, Human Resources staff reviewed the scantron and it showed the correct answers for questions 58 and 62 were shaded in similar to all other answers selected.

The Civil Service Director was notified of the grading process prior to and during the test, and the issue identified by Rosier during review. The grading was performed electronically by submitting each scantron through the calibrated machine. The grading which was performed by the Scantron on the date of the exam indicated Fire Engineer Rosier had left questions 58 and 62 blank, and therefore marked them incorrect. There was no indication from the machine's results that any answer had been selected at the time of the initial grading. However, the correct answers for both questions were now clearly reflected on the scantron. Fire Engineer Rosier requested that he be given credit for the answers to questions 58 and 62. The Civil Service Director indicated to staff that she could not make that change, as raw score results had been posted. She advised staff to inform Rosier that he would need to complete an appeal form and go before the Commission for consideration of his appeal. He subsequently provided appeal forms for each question as attached.

On April 24, 2023, members of the Grand Prairie Audit Department personally reviewed the grading of all 70 promotional exams administered on April 11, 2023 and April 12, 2023 to identify any potential grading errors. The only discrepancy between the original grading by the machine and the grading by the audit department was the discrepancy with regard to Fire Engineer Rosier's test for questions 58 and 62. No discrepancies in grading were found on any other test, and no discrepancies in grading were found on any other answer with regard to Fire Engineer Rosier's test. It should be noted that, in addition to the machine detecting "blanks" in response to questions 58 and 62 on Rosier's scantron, the machine also detected a "blank" on another scantron for the Driver/Engineer exam. The review of that scantron confirmed the candidate had left all answers for that question blank on the scantron.

### **GROUNDS OF APPEAL:**

Fire Engineer Rosier alleges his test was incorrectly graded.

### **RELIEF SOUGHT:**

Re-grade the test for Fire Engineer Rosier using "B" as the answer for question 58 and "C" as the answer for question 62.

Item 13.

APPEAL OF PROMOTIONAL EXAMINATION QUESTION

Name: TAYLOR 12151ER

Date: 4/14/ 2023

INSTRUCTIONS: Please complete one form for each question that you wish to appeal. State clearly what you believe is wrong with the question and provide a reason for your belief. Please type or write legibly. If additional space is needed, go to the back of this page.

DATE (	DF EXAM: 4/12/202 7 TEST RANK: LIEUTEN ANT QUESTION # 58			
REFER	ENCE PAGES 47-48 REFERENCE BOOK: INCLUENT MANAGEMENT FOR THE STREET			
REFERENCE PAGES 47-48 REFERENCE BOOK: INCIDENT MANAGEMENT FOR THE STREET SMART FIRE REPORT OFFICER General reason for objection: (Check one of the following and explain fully below)				
	The keyed answer is not correct. Another answer is correct and it should be allowed for credit <u>instead</u> of the keyed answer. My answer is			
	Another answer is also correct, <u>in addition</u> , to the keyed answer. Both answers should be allowed for credit. My answer is			
	The exection is faulty because there is no connect ensure the choice. The exection should be			

The question is faulty because there is no correct answer among the choices. The question should be <u>eliminated.</u>

Other: THIS QUESTION WAS MATCHED IN CURRECT, BUT THE COCRECT ANSWER WAS SELECTED.

Reasons(s) supporting your appeal:

WHEN LOOKING OVER MY EXAM, I FUNNO THAT A QUESTION I ANSWERED CORRECTLY WAS MARKED IN CURRECT. I VERIFIED IN THE BOOK THAT IT WAS THE CORRECT. I ASKED ARCELIA TO VERIFY THE ANSWER KEY, AND THE ANSWER VEY CONFIRMED THAT MI ANSWER WAS CORRECT. I FOUND AN ADDITIONAL QUESTION AS WELL (62).

ARSELIA ADVISED THAT SHE WOULD SEEK GUIDANCE. I WAS THEN ADVISED THAT MY SCHANTRON WAS FADDEN "DEFECTIVE" AND SHOWED THE QUESTIONS AS UN ANSWERED.

THE TWO QUESTIONS IN DISCUSSION, I AUSWERED AND FILLED IN MY SCANTRON ON THE DAY OF THE TEST. I DID NOT LEAVE THEM UNANSWERED. I DID NOT FILL THEM IN DURING THE APPEAL PERIOD DURING THE NEAT 5 DAYS. I DID NOT ENTER THE REVIEW ROOM WITH A PENCIL OR PEN. I DID NOT USE ANY FORM OF DECENT.

Continue on back of this form if needed.

	APPEAL OF PROMOTIONAL EXAMINATION QUESTION		
Name:	TAYLOR ROSIER Date: 4/14/2023		
INSTRUCTIONS: Please complete one form for each question that you wish to appeal. State clearly what you believe is wrong with the question and provide a reason for your belief. Please type or write legibly. If additional space is needed, go to the back of this page.			
	OF EXAM: 4/12/2023 TEST RANK: LIGUTENANT QUESTION # 62		
REFERENCE PAGES 99 REFERENCE BOOK: NICION MANAGEMENT FOR THE STREET SMART			
General reason for objection: (Check one of the following and explain fully below)			
	The keyed answer is not correct. Another answer is correct and it should be allowed for credit <u>instead</u> of the keyed answer. My answer is		
	Another answer is also correct, <u>in addition</u> , to the keyed answer. Both answers should be allowed for credit. My answer is		
	The question is faulty because there is no correct answer among the choices. The question should be <u>eliminated.</u>		
	Other: THIS QUESTION WAS MATLED IN CORRECT BUT THE COOD CORRECT		
	ANSWER WAS SELECTED.		
Reasons(s) supporting your appeal:			
WHEN LOOKING OVER MY EXAM FOUND TWO QUESTIONS WERE MARKED			
WHEN LOOKING OVER MY EXAM FOUND TWO QUESTIONS WERE MARKED INCORRECT THAT I HAD ANSWERED CORRECTLY. 62 WAS THE SELOND			
OF THE TWO, I VERIFIED MY ANSWER IN THE BOOK. I ASKED ARSELIA			
TO VERIEY THE AUSWER KEY, AND THE ANSWER KEY CONFIRMED			
MY ANSWERS WERE CORRECT.			
ARSELIA APVISEDTHAT SHE WOULD SEEK GUDANCE, I WAS THEN			
ADVISED THAT MY SCANTRON WAS "DEFECTIVE" AND SHOWED			

THE QUESTIONS AS UNANSWERED.

LANSWERED BOTH QUESTIONS IN DISCUSSION ON MY SCHWTRON ON THE DAY OF THE TEST. I DID NOT LEAVE THESE QUESTICUS UNANSWERED. I DID NOT FILL THEM IN DURING THE 5 DAY APPEAR PERIOD WHEN I REVIEWED MY TEST. I DID NOT ENTER THE REVIEW ROM WITH A PENCIL OR PENO I DID NOT USE ANY FORM OF DECENT.

Continue on back of this form if needed.