

**City and County of Denver Fire Department
Engineer Promotional Process 2022
Candidate Orientation Handout**



General Information

Introduction

Ergometrics & Applied Personnel Research, Inc. is a human resource management firm specializing in personnel selection and training. Established over 40 years ago, Ergometrics has designed the most comprehensive, award-winning, video and job simulation testing programs in the nation. We have provided personnel testing services for over 2,000 clients in the U.S. and Canada.

Components of the Selection Process

There are two components included in the promotional process that contribute to your overall promotional score. These dimensions are described below and weighted as follows:

1. Multiple-choice exam (35%): A 120-item multiple-choice test of professional knowledge and leadership skills based on sources identified by the department.
2. A practical exam consisting of two exercises (60%):
 - a. **Pumping & Driving exercise:** For this exercise, you will be asked to perform a series of commonly performed pumping exercises and drive an apparatus to spot at a hydrant.
 - b. **Aerial/Driving Exercise:** For this exercise, you will be asked to perform a series of commonly performed aerial apparatus activities.
3. Seniority (5%): The department will assign a seniority score based on each candidate's tenure with the department and any other seniority factors as determined by the department.

Test Date, Time, and Location

Test Component	Date	Time	Location
Written Examination	April 5, 2022	Registration Opens 7:30 am. Registration Closes 8:00 am. Latecomers will not be allowed to test. Test 3 hour duration.	Lakeside Union Hall 12 Lakeside Lane Denver, CO 80212
Practical Examination*	May 17 – May 19, 2022	TBD	Denver Fire Academy, 5440 Roslyn Street, Denver, CO 80216

*The Commission will inform you of your reporting time prior to the Practical Exam.

Dress Code

You will be required to wear your Class B uniform or business casual attire to the multiple-choice exam.

You will be required to wear your Class B uniform to the Practical Exam. **IN ADDITION, YOU MUST BRING YOUR HELMET, WORK GLOVES, EYE PROTECTION, AND STEEL TOED SHOES WITH YOU TO THE PRACTICAL TEST.** You may wear your badge, but you must remove your name tag. No pins, insignia, etc., indicating names or special commendations will be allowed.

General Test Information

- You are responsible for monitoring your own time during the promotional exam. A watch is recommended; ensure your watch does not contain any prohibited electronic features.
- Candidates are prohibited from receiving or sending pages, texts or calls during any part of the promotional process. **No electronic devices are allowed** at the testing site.
- Get rest and a good night's sleep prior to your exam.
- Arrive early. This is one of the easiest and most effective ways to minimize stress.
- Candidates are prohibited from removing any material from the testing site.

Test Security and Confidentiality

You will be required to sign a security and confidentiality agreement, stating that you have not and will not violate test security. Breach of this agreement is subject to prosecution under federal copyright law and would be viewed as an unacceptable integrity failure for an employee, particularly a management candidate. Additionally, to maintain test security, there are specific devices not allowed in the testing session. These include cellular phones, pagers, audio/radio headsets, cameras, recording devices or other electronic devices.

Disclaimer: The information provided in this handout is meant to be helpful and prepare you for the general nature of the process. It is not meant to advise you of every question that will be asked. Some aspects of the process may be modified, including order of events and times.

Written Exam

On April 5, 2022 you will take a multiple-choice written examination consisting of 120 multiple-choice questions based on the reading list you have been provided. The written test has been developed and prepared by Ergometrics and Applied Personnel Research, Inc., a human resources consulting firm that specializes in the development of fire department promotional examinations. The questions in the examination have been selected and reviewed by a panel of Denver Fire Department subject matter experts (SMEs). Following is some information that will assist you in preparing for the written examination.

Book-Referenced Written Exam

At your scheduled time, you will take a multiple-choice written test consisting of 120 questions. You will have three hours to complete the written exam. The exam will be based on the following references:

1. **IFSTA Pumping and Aerial Apparatus Driver/Operator Handbook, (2015) 3rd Edition, Third Printing.** (Exclude Page 21 Dealing with Fireboats, (Pages 212 - Formula 7.1 (metric), Page 214 – Formula 7.2 (Metric) and Formula 7.3 (Metric), Pages 248 through 277 Dealing with Formulas Example - International System of Units (Metric), Page 286 (table 8.1b (Metric)), (Pages 92 through 93, 117 through 118, 128 through 131, 543, 553 through 555, 581, 588 through 591, 664 through 665, and 669 through 671 Dealing with Tillers), Pages 684 through 686 Dealing with Operating Articulating Aerial Equipment, Chapter 11, Chapter 13, Chapter 15, Appendix A, Appendix B, Appendix D (table D.1, D.3, D.5, D.8, D.9, D.10), Appendix E, and Appendix F), Glossary, and Index)
2. **Local 858 2022 Fire Fighters Agreement**
3. **DENVER FIRE DEPARTMENT DIRECTIVES**
 1. Accidents and Driver Review – 1010.00
 2. Driver Safety Program – 1010.01
 3. Accidents Involving DFD Vehicles or Apparatus – 1010.02
 4. Accidents NOT Involving DFD Vehicles – 1010.03
 5. Accidents Involving DFD Vehicles on DFD Property – 1010.04
 6. Driver’s License and Violation Reporting Policy – 1010.05
 7. Emergency (Code 10) Responses – 1010.06
 8. Use of Seat Belts in Department Vehicles – 1010.07
 9. Uniforms and personal appearance- 1011
 10. Mission Statement – 1019.00
 11. Code of Conduct – 1020.00

12. Sexual Harassment Policy – 1021.00
13. Executive Order 94 – City and County of Denver Employees’ Alcohol and Drug Policy – 1022.00
14. Use of Department Psychologists by Fire Department Personnel For Problems Of Drug And/or Alcohol Abuse – 1023.00
15. Mandatory reporting of Elder and Child Abuse 1031
16. Discrimination, Hazing, harassment and retaliation 1037
17. Equal employment opportunity policy 1037.0

4. DENVER FIRE DEPARTMENT STANDARD OPERATING GUIDELINES

1. Rank Structure – 2101.01
2. Operating Apparatus in Reverse – 2105.01
3. Hose Inventory, Maintenance, and Testing – 2106.01
4. Rapid Intervention Team – 2110.01
5. Natural Gas – 2111.07
6. Carbon Monoxide – 2111.22
7. Engine Company Operations – 2112.01 through 2112.10
8. AFFF/ATC Foam – 2112.11
9. Truck Company Operations – 2113.01, 2113.02 and 2113.04
10. High Rise – 2114.00, 2114.02 through 2114.08, and 2114.20 through 2114.30
11. Special Operations Collapse Rescue – 2115.02
12. Special Operations Confined Space Rescue - 2115.03
13. Hazardous Materials – 2116.01 and 2116.02

5. 2019 COLORADO COMMERCIAL DRIVER LICENSE (CDL) MANUAL

1. Section 2 (Driving Safely)
2. Section 5 (Air Brakes)
3. Section 8 (Tank Vehicles)

6. Executive Orders

1. Executive Order 112 – Violence in the City Workplace

7. DENVER FIRE DEPARTMENT ENGINEER’S QUICK REFERENCE CHART

8. DENVER FIRE DEPARTMENT FRICTION LOSS PUMP CHART

Book References

Your department has determined the above publications necessary to read in preparation for your upcoming promotional process. You are competing with other outstanding members of the department. Studying the publications assigned is one way you may improve your chances of

ultimately being the top competitor.

Purpose of Book-Referenced Test

Higher-level positions call for deep knowledge of technical topics. The department is interested in promoting future leaders who will do the necessary studying and use the information on the job. As a promotional candidate, these tests are your opportunity to demonstrate your study ethic and effectiveness. The books assigned for this exam represent only a small portion of the formal study that will be required upon promotion. This test is not intended to measure all aspects of your promotional potential. It is designed to look at your ability to absorb important information that comes from reading materials.

[Preparation strategies below are suggestions only. Each individual is personally responsible for determining which preparation strategies and tips are appropriate for himself/herself.]

Preparation Strategies

Studying the selected publications is one way to improve your chances of ultimately being the top competitor. There are many different approaches that one can take to studying. An excellent way to prepare for a multiple-choice book-reference test is to read each publication twice. First, read it straight through so that you understand the general focus, as a whole. Then, reread the publication, making notes and highlighting the most important points that you see in each section. Other strategies are to use acronyms for remembering information or to form a study group. In the end, the choice is personal. When you find a strategy that works best for you, test yourself by considering how you would explain the content of a section to a subordinate.

Study Tips

1. **Minimize environmental distractions.** Try to limit the amount of distractions in your environment when studying. This includes, but is not limited to email, cell phones and even other people. Eliminating distractions will make it easier for you to concentrate and retain the information you are studying.
2. **Avoid burning the midnight oil.** For many people, it is harder to retain information when tired. If possible, try to study when you are well rested and ready to concentrate.
3. **Review chapter overviews or summaries.** Chapter overviews and summaries typically provide information on the most important points in a chapter. Many times, it is helpful to review these areas before reading a chapter to help you understand what the important topics are in the chapter. After reading the chapter, overviews and summaries can be used to test yourself on critical knowledge from the chapter.
4. **Quiz yourself.** After reading a chapter or section, quiz yourself on important topics, definitions, etc. You can also develop questions regarding the material based upon headings and specific terms prior to reading it and then, while reading the section or chapter, try to answer those questions.

5. **Have someone quiz you.** After reading a text, a great way to see if you have retained information is to have someone ask you questions regarding the material you just read.
6. **Avoid cramming.** Spreading your studying out over time will help you concentrate and retain the information you read.
7. **Look up words or phrases you don't know.** Have a computer or dictionary available when studying so that you are able to look up words and phrases that you don't know.
8. **Mark it up.** Highlight and/or underline important sections of the text while you study. This will help you concentrate on important topics and make it easier to review the material again later.
9. **Take notes.** Taking notes of the important topics in the text you read can help you remember what you read and be an efficient study aid.

Test Taking Tips

The written test items have four answer choices. To get the highest score, always select the best choice listed, even if more than one seems good to you. Be sure to read all answers before deciding your final answer. Don't focus on a choice that is not given to you. Don't get distracted by thinking of other possible responses that are not among the choices presented. Don't get stuck on the idea that you want to combine two responses. Show your judgment by picking the one answer that, by itself, is better than any other answer, by itself.

Prepare yourself physically and mentally for your exam as you would prepare yourself for any special assignment that requires concentration. Get the amount of sleep that will leave you most alert. It's also a good idea to eat a nutritious and hearty meal to help you stay focused throughout your exam. Unusual changes in your routine may cause you problems during your exam. For example, consuming more caffeine than usual may make you jittery; less than usual may leave you listless. Try to remain calm and relaxed before and during your exam. If you feel anxious, take a few moments to calm yourself down. Bring to the test administration site whatever personal items you need for the exam, such as eyeglasses or tissues.

Here are some additional tips to help you during the book-referenced exam. These simple procedures help you avoid marking the wrong answer when you know the right one.

1. **Listen to the instructions.** Before you begin the exam, it is important that you read and/or listen to all instructions carefully. Ensure you know how to correctly fill out the answer sheet. Specific instructions will be provided at the test site.
2. **Get familiar with your test.** When you begin the multiple-choice written test, glance through it to acquaint yourself with the task ahead of you. You do not have to go through the questions in the order you find them.
3. **Check the time.** Check your watch periodically throughout the exam so that you know how much time you have remaining.
4. **Don't spend too much time on one question.** If you have a difficult time with a question, go on and come back to that question later. Do make a note to come back to it, though.

You may come back with a fresh approach, and a question you had trouble with earlier may seem easy.

5. **Read thoroughly.** Read every question carefully before you attempt to answer it. This advice may sound too simple, but it is important. The major reason people miss questions when they know the material is that they do not read the question completely.
6. **Circle or underline key words.** When reading a question, circle or underline key words that are important to the question stem. This will both help you focus on the critical aspects of what is being asked, as well as help you remember the important aspects of the question if you need to skip it and return to it later in the test session.
7. **Break a sentence up if you don't understand it.** Sometimes sentences in a question stem can be long. If you don't understand the sentence, use slash marks to break it into smaller sections to better understand the sentence.
8. **Read all of the answers before choosing one.** The most common answer people choose is *a*, whether it is right or not. That is because they think the first answer looks okay, so they stop reading. Don't make the mistake of not reading all of the answers before making a selection. Even if *a* looks like a really good answer, one of the other answers may be better. When you read the other alternatives, you may think of something you had missed at first.
9. **Use process of elimination.** If you aren't sure of the correct answer use process of elimination. Eliminate answer choices that you know are definitely wrong. Then focus on selecting the best answer from the choices remaining.
10. **Do not read something into the question that is not there.** On a situational question, assume that everything is normal unless the question tells you differently. Assume that the pavement is dry; visibility is good; your supervisor is competent; and citizens are behaving normally. When something is amiss, the question will tell you. Stick to the facts of the questions.
11. **Answer every question.** There is no penalty for guessing. Even if you don't know the correct answer, you have one chance in four of choosing the right one. If you can eliminate one or two of the alternatives, your chances are even better.
12. **Fill out your answer sheet correctly.** In marking the answer sheet, be sure to fill in the blank that corresponds to the answer you have chosen. If you skip a question, make sure you skip to the right space on the answer sheet. If you mark the wrong answer and want to change it, erase your first mark completely. Remember to only mark *one* answer for each question.
13. **Use your time wisely.** If you finish early, use the remaining time to answer questions you skipped, re-evaluate questions you were unsure of and check to ensure that you filled out your answer sheet correctly.
14. **Test Proctor/Procedures.** A test proctor will be available during the exam to help the candidates with the testing procedures only; however, he or she will not explain the meaning of any question, define words, or give information which may be of help in

answering a question. If you have any questions about the testing procedure, make sure to ask for assistance before the test begins.

Test Your Assumptions

When taking your test, don't compromise your chances of success by trying to follow test-taking tips you may find online. Many of these tips are just bad advice and could cost you points. Use the following statements to test your assumptions.

True or False?

True

False

1. If you don't know the answer to a test question, take a guess.

True! Guessing is not penalized and you just might get it right.

2. Choose the longest answer option.

False! General pattern responses like this are a very poor way to approach a modern test. The length of the answer choices is not an indication of an incorrect or correct response.

3. Choose the answer option that seems most logical to you.

True! Rely on your knowledge of the assigned publications to think critically and logically when answering a question.

4. Choose the answer with a middle value when other options are higher or lower.

False! This is another piece of bad advice you might come across somewhere. No such pattern as this is present on Ergometrics' tests.

5. More often than not, the correct answer is B or C.

False! Once again, poor advice. General pattern strategy is not a way to pass a modern test. There is no pattern to Ergometrics' correct answers. Answer questions by content, not by old, incorrect advice or superstitions.

Practical Examination

Practical Examination

The practical examination is scheduled for May 17 – May 19, 2022. The practical exam consists of two exercises, Pumping and Driving, as well as an Aerial/Driving and Apparatus Inspection exercise. These exercises have been developed to simulate real situations performed on the job by Denver Fire Department engineers. Ergometrics facilitated meetings with Denver Fire Department SMEs to develop and review all materials related to these exercises.

You will be provided written and verbal instructions before each exercise. If you do not understand any instructions, ask the rater for clarification. Raters will provide as much information as deemed appropriate and fair to all candidates participating in this exam. No question will be answered that would provide an unfair advantage to a candidate.

Each exercise will be based on department operations manuals (e.g., JPR's, aerial manual, pumping manual) maintenance rig protocols, and department charts (e.g., friction loss pump).

You will be escorted to the starting point of each exercise. Once you start an exercise, you will be evaluated by trained raters. The raters will be observing your performance and rating your performance based on a standardized scoring sheet.

Safety in this practical testing process is paramount. If at any time you feel there is a situation that is not safe, you should inform the raters. If you feel you are being asked to do something that is not safe, you have the responsibility to inform the raters. Furthermore, the raters will stop you if they feel you are creating an unsafe situation.

If an unsafe event is caused by you, the exercise will be stopped until the situation is rectified. During this time, the exercise timer will remain active and points will be deducted as appropriate. If you are not responsible for the unsafe condition, you will not be penalized and the timer will be stopped until the situation is resolved. There are no unsafe conditions that have been purposely incorporated in the testing process.

When you report at your appointed time for the practical test, you are required to wear a Class B uniform. In addition, you must bring your helmet, work gloves, eye protection and steel toed shoes with you to the practical test. However, no name tags will be permitted.

Pumping & Driving Exercise

This exercise was developed to simulate commonly performed pumping activities. There will be two components to the exercise. These activities will include a driving/ spotting component, as well as calculating hydraulics problems and hands-on performance to demonstrate your ability to pump the conditions established in the problems. You will be provided with a Denver Pump Chart, grease pens, and paper and pencil. You will be provided written and verbal instructions before each exercise.

Prior to beginning the pumping station, you will be expected to drive an apparatus through a course and spot it at a hydrant. You will be provided with instructions on the test day.

Verbalize all steps you are taking while completing the exercise. Don't assume the evaluators know what you are doing.

[This is an example of typical conditions and tasks for a Pumping & Driving exercise. Actual instructions, tasks, and conditions being used for this promotion will be given to you at the time of the Practical Exam.]

Part I Conditions: The apparatus will be positioned at the start of the driving course. Part I will conclude once you spot the apparatus at the hydrant, along with establishing the appropriate connections.

- Wearing a seat belt
- Driving
- Positioning of rig
- Setting brakes
- Establishing all connections
- Opening discharge/intake valves
- Establishing and monitoring pressure and changing pressure if necessary
- Opening valves smoothly

Part II Conditions: The apparatus will be spotted at the hydrant with the engine off. All mechanical checks will have been made. The transfer valve will be set in the pressure position and the pressure relief control will be set at 150 psi and in the "off" position. During this exercise you will not have to drive or spot the vehicle. All equipment necessary for the exam will be provided. Here are some of the tasks you will be asked to perform:

- Answering questions
- Starting engine and engaging pump
- Opening discharge valves

- Establishing and monitoring pressure and changing pressure if necessary
- Opening valves smoothly
- Setting pressure relief control
- Communicating results of calculations

Aerial/Driving Exercise

This exercise was developed to simulate commonly performed Aerial/Driving operations. This exercise will include driving set-up and operations, as well as knowledge of aerial backup systems and emergency overrides. This will include, but is not limited to, driving, spotting, preparing for operations, operating the aerial and securing the aerial for driving. You will be provided written and verbal instructions before each exercise.

[This is an example of typical conditions and tasks for Aerial/ Driving operations. Actual instructions, tasks, and conditions being used for this promotion will be given to you at the time of the Practical Exam.]

Conditions: The apparatus will be located a short distance from the drill tower. The candidate will be required to drive the apparatus to the drill tower and spot it for operations in accordance with the written instructions. Here are some of the tasks you will be asked to perform:

- Appropriate procedures prior to driving the apparatus
- Wearing a seat belt
- Driving
- Positioning of rig
- Setting brakes and wheel lockset
- Operating outriggers
- Moving aerial smoothly
- Positioning of aerial
- Knowledge of apparatus back-up systems and emergency overrides
- Knowledge and application of DFD Driver Operator JPR for Apparatus Inspection (JPR- D01)

Practical Exam Preparation

The information below is meant to be a brief general overview to help you prepare for practical exam components that take place before several raters. There are many other resources, including books, classes and on-line resources that are available, should you choose to use them.

As you approach a promotional competition, the most important thing is your own personal readiness for assuming a higher-level position and how that compares with the readiness of others. That does not mean formal preparation only, such as education and study. It also means your mental, intellectual and developmental readiness.

In the practical assessment center, you will interact directly with several raters that will ask questions, listen to your answers and observe your behavior. There is nothing to be gained, and much to be lost, by trying to pretend you are someone other than who you are. You do, however, want to show yourself to your best advantage.

Practice Dates

Denver Fire Department will offer practice dates for the pumping and aerial/driving exercises. The practice dates are TBD and will be announced and confirmed by the Civil Service Commission. The department will confirm times with the candidate.

Arrive early

This is one of the easiest and most effective ways to minimize stress.

Prepare

You may be able to do well without preparing, but you can always do better with preparation. Remember, you are competing against others who are also very good and you need to do your best to stand out as excellent. The more prepared you are, the more relaxed and confident you will be. There are many ways you can prepare:

- **Understand the job.** Understanding the job itself is the most important way to improve your competitiveness for promotion. The more you understand about supervision, management, department practices and organizational goals, the better you will be able to answer potential questions relating to the job and organization. Expand your understanding of management issues and solutions through study and seeking mentors. Even reading one management book can give you more depth.
- **Minimize how much you will need to “wing it.”** A practical is like an emergency response. You never know precisely what the demands will be, but the more you have practiced

what you can, the easier it is to improvise and adapt. You will have to demonstrate flexibility and on-the-spot thinking. Try to develop your thinking as much as you can in advance. Study your handouts. Learn as much as you can about the job. Think about how you would handle management challenges like those you have observed.

Don't pretend

Represent yourself honestly and don't try to fake it. Don't spin your experience to sound like something it's not. Don't use words you don't know as that is a quick way to cast doubt on your credibility, intelligence and integrity. It is easy for assessors to identify candidates who have memorized answers to questions that they don't really understand or believe.

Display confidence

You are applying for a position of greater responsibility. You will need to be a role model of confidence and credibility.

- **Show that you can communicate with managers.** Answer questions; use eye contact.
- **Never answer a question you don't understand.** Ask for clarification when needed.
- **Don't act confused.** If you are confused just say so and ask the raters for clarification. Don't self-deprecate or apologize for your answers.
- **Think aloud.**

Whatever your answer to a question is, the raters may understand it better if you think aloud. Considering options is an important part of management thinking.

Imagine yourself in the rater's place

Be friendly and respectful to the raters; they are trying to do a good job, just like you. Don't act defensive if they ask for information that you think they should already know. This is your chance to show how you respond in public situations and how easy you might be to work with.

Don't make assumptions

The raters are considering large amounts of complex information about many candidates. Don't assume anyone has memorized or knows anything about you. If something is important for understanding what you are saying, just tell them.

Be concise in your communication

Sufficient time is provided in the exercises to communicate the necessary answers to questions asked. Time management is a critical management skill that requires preparation.

Relax as much as you can

Try to maintain physical relaxation and use appropriate gestures. Smile - don't act like you are in pain and don't feel you have to fill every silence. Answer questions and then wait for the next question. At the end of the exercises, thank the raters.

Do your best

Remember, the most important thing is to represent yourself honestly and do your best.

Good luck to you in the promotional process.

If you have any questions about the process, please contact the Denver Civil Service Commission.