



Question Papers and Report of the
Assessors and the Examiners for the
Qualifying Examination for
Promotion to the Rank of
Leading Firefighter
Part I: Written Examination 2000

QUESTION PAPERS AND REPORT OF THE ASSESSORS AND EXAMINERS FOR THE QUALIFYING EXAMINATION FOR PROMOTION TO THE RANK OF LEADING FIREFIGHTER
PART 1 WRITTEN EXAMINATION 2000

GENERAL COMMENTS

The fifteenth examination conducted by the Fire Services Examinations Board produced a pass rate of 20.5% from 1484 candidates who sat the examination. Although it is difficult to compare these results with those of last year, they show a decrease in the previous year's pass rate (42.6%) and a decrease of 289 (16.3%) in the number of candidates sitting the examination.

This was the first application of the new examination format using four papers with only subjective questions all of which needed to be answered as opposed to the previous use of two papers each of which provided a choice of subjective questions and also used objective questions.

The examination now includes additional papers that relate to Human Resource Management (Paper 3) and Business Administration (Paper 4). As these subjects are new to the examination, it is essential that candidates effectively work through the study notes relating to them and understand the subject matter.

It was evident that numerous candidates had made a significant effort to prepare themselves for the examination which was evidenced by the quality of their answers. Unfortunately these were in the minority and it remains apparent that many had not adequately prepared themselves or studied the bibliography.

Reliance on day to day experience for examination purposes without studying the established bibliography will invariably never be sufficient to achieve a successful result.

Assuming that a reasonable level of study has been satisfied, it then only remains for the candidate to apply basic care and examination technique to the questions set in order to achieve the required result.

As regards study, for the purposes of operating a level playing field for candidates, only the established bibliography for each paper is used when setting the questions and creating the marking guide for the answers. It is impossible, and would be incorrect, to endeavour to accept what may be the policies or procedures applied in brigades. Candidates must be encouraged to study the bibliography for the examination in order to provide themselves with a reasonable chance of success. Equally, the knowledge gained will be useful during the candidate's progress in their fire service career, especially if success brings an increase in rank and, with it, additional responsibilities.

As regards examination techniques, candidates are advised to follow the instructions given. If the question requests you to "list", "explain briefly" and "describe", it does so because it is considered that this will provide the best format for the candidate to use.

The careful reading of the question is a basic requirement. The questions contain no hidden catches. The stem of the question, when provided, will give the background to it and then establish the information required from you, together with the format in which to provide it. The provision of information beyond that required is invariably unnecessary and takes up valuable time. Unfortunately, this provision of additional information usually indicates a lack of knowledge of the information sought by the question, but is submitted in the hope that marks will be awarded. Candidates are advised that if the information provided does not relate to that required by the question, no marks will be awarded no matter how correct the detail provided might otherwise be.

Finally, in order to ensure that the marking of their papers provides no additional problems, candidates should follow these basic rules:

- Always use a pen and not a pencil to write your answers.
- Start each question on a new page in your answer book and write the number of question in the box provided for it on the top of the page.
- Always prepare your answer in your mind or on rough paper before applying it to the answer book.
- When you believe that you have completed each paper, read the questions yet again and carefully read the answers that you have provided to them. Obvious discrepancies which would otherwise fail to obtain marks may easily be identified and then corrected.

The following pages contain the detailed comments of the Assessors and Examiners and a careful study of them should be beneficial to future candidates.

PAPER 1: OPERATIONS

GENERAL COMMENTS

Communications/Operations is the successor to the old Paper 1 which covered appliances and equipment, practical firefighting and hydraulics and calculations. The observations regarding the standard of answers given in scripts is, therefore, of a general nature but, the overall impression gained by the examiners was that there was an improvement this year.

Whilst the examination may be new, the shortcomings of old persist. Too many candidates have inadequately or clearly not studied the bibliography, failed to read or understand the question properly and did not follow the instructions given. This is particularly important when the question calls for the provision of a list. In far too many cases, resorting to a lengthy script only provides a thin disguise for an inadequate knowledge of the subject matter. Candidates should also note that where, for example, five points are asked for in a list, the provision of additional points will not be beneficial as only the first five will be marked.

SECTION A FIRE APPLIANCES, EQUIPMENT AND SYSTEMS

Attempt BOTH questions

- 1 You are to supervise inexperienced firefighters practising pump operator skills. What is the explanation you would give to these firefighters on the characteristics of a centrifugal pump:
- (a) when operating from an open water supply; (4 marks)
- and
- (b) which relates pump speed to pressure and flow? (6 marks)

Bibliography: Manual of Firemanship Book 7, Chapter 10, page 106.

This question was very badly answered by many of the candidates. The main reason for this was the failure to recognise that the question asked for certain specific characteristics of a centrifugal pump in defined circumstances. Candidates who therefore provided lengthy and detailed descriptions of the construction, workings and practical operation of centrifugal pumps gained no credit.

Part (a) required candidates to provide information such as the maximum practical lift and the relationship between lift pressure and flow whilst part (b) required a demonstration of understanding that, for example, when pump speed increases both pressure and flow increase.

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- 2 You are Leading Firefighter Red, the officer-in-charge of a pump (call sign Bravo 12) which is part of a three pump attendance to an incident. On arrival it is found to be a serious fire with persons reported missing. The officer-in-charge of the incident, Station Officer Green, instructs you to send a radio message to brigade control (call sign M2FH) asking for two turntable ladders and to increase the number of pumps to ten.
- (a) Describe the radio procedure you would apply prior to sending the message. (3 marks)
- and
- (b) Give the precise wording of the message you would send. (7 marks)

Bibliography: Fire Service Training Manual, Part 9, pages 4, 6 and 11.

This question was reasonably answered by the vast majority of candidates. However, it was disappointing to note how few candidates achieved an excellent standard of response.

A large number of candidates attempted to answer part (a) with operational procedures rather than radio procedures as instructed in the question.

Whilst part (b) was generally well answered, those candidates who did not do well failed to demonstrate, in the wording of the messages given, that they understood the importance of adhering strictly to the use of laid down terminology and procedures as an established feature of good radio operation.

A few candidates appeared to believe that the type of message asked for was an informative message, whilst others introduced a range of phrases unknown to the examiners and not found in the bibliography, which may be local practice or imported from further afield such as “third alarm” and “two height appliances required”. Some candidates stated that they would not include the phrase “persons reported” in the message as this would be sent separately as an informative message. Whilst this may be the practice in some brigades, the examination is based on the Fire Service Training Manual, wherein it is quite clear that this phrase may be incorporated into an assistance message where necessary.

SECTION B OPERATIONAL PROCEDURES AND INCIDENT COMMAND

Attempt BOTH questions

- 3 The Incident Commander is concerned about the stability of a building involved in fire and has appointed you to be responsible for monitoring one side of the building for signs of collapse. List the FOUR principal signs of collapse of a building to which you would be alert.

(10 marks)

Bibliography: Manual of Firemanship Book 11, Chapter 4, page 58.

Regrettably less than half of the candidates achieved a satisfactory level of marks. The most common error was the failure to identify the difference between causes and signs of collapse, whether through a failure to read the question properly or a lack of understanding of the difference between the two.

Nonetheless, it was encouraging to note a number of excellent answers which attracted high or, in some cases, full marks.

- 4 A junior officer needs a basic understanding of the Fire Service's approach to the adoption of safe systems of work. When associated with firefighting, identify:
- (a) the THREE key principles which summarise the philosophy of the Service's approach to operational risk assessment. (6 marks)
- and
- (b) the FOUR key elements of any dynamic risk assessment. (4 marks)

Bibliography: Fire Service Manual Volume 2, Incident Command, page 30.

Whilst there was an encouraging number of excellent and outstanding scripts attracting very high marks, the vast majority of candidates failed to achieve a satisfactory level. The few marks that the latter group did achieve were based on general operational practice from which it was possible for the examiner to identify some elements of dynamic risk assessment. Most of these candidates failed to identify any of the key principles summarising the Service's philosophy with regard to operational risk assessment.

This is extremely disappointing since these philosophical principles and the four elements of dynamic risk assessment must underpin every fireground decision made by a Fire Service Officer of any rank which is why they are spelt out so clearly and succinctly right at the beginning of the section of the Fire Service Manual dealing with incident command.

Many candidates appeared to think that the three principles which underpin the Service's philosophy with regard to operational risk assessment were team needs, individual needs and task needs, whilst others believed that dynamic risk assessment could be divided into systematic and strategic. None of these, of course, attracted any credit.

SECTION C FIREFIGHTING AND RESCUE INCIDENTS

Attempt BOTH questions

- 5 You have been instructed by the Incident Commander of a chemical incident to set up a decontamination zone. List FIVE factors you would take into account in choosing a site. (10 marks)

Bibliography: Manual of Firemanship Book 12, Chapter 8, pages 146 and 147.

A good number of candidates achieved a satisfactory level of the available marks. The use of a diagram by some of the candidates proved to be an excellent means of demonstrating their understanding of this subject and thus attracting available marks.

Marks failed to be obtained by candidates who believed that the decontamination zone should be set up downwind of an incident, whilst others indicated that the zone should be set up in relation to the position of parked appliances, rather than any appliances required for decontamination located in accordance with the choice of decontamination site. Those candidates who failed to achieve high marks, demonstrated, as usual, that operational experience alone is insufficient to perform well in an examination on operational procedures.

The question asked candidates to provide a list which a few did not, apparently expecting the examiner to identify any relevant points from a lengthy, often irrelevant, prose description.

- 6 You attend as officer-in-charge to a fire at a large refuse tip. Identify FIVE hazards at the site which could provide hidden dangers to firefighters. (10 marks)

Bibliography: Fire Service Guide to Health and Safety, Volume 3, Guide to Operational Risk Assessment, Section 3.7, page 53.

With the exception of a small number of candidates, this question was answered well. Whilst, as usual, there was evidence of candidates relying on their limited operational experience, those candidates who had clearly studied the topic were able to express their responses in much clearer language. This is not to suggest that the examiner was expecting candidates to recite the Fire Service Manual, merely that the understanding which comes from such study enables the candidate to answer the question with greater clarity.

SECTION D SCIENCE AND FIREFIGHTING

Attempt BOTH questions

- 7 Name and briefly explain the THREE methods by which heat may be transmitted. (10 marks)

Bibliography: Fire Service Manual Volume 1, Physics and Chemistry for Firefighters, pages 33 - 36.

This question was well answered by the majority of the candidates. There was a significant number of outstanding scripts, the best of which was supported by simple, clear and relevant diagrams, many of which were similar to those used in the bibliography, thus demonstrating that many had properly studied this subject.

- 8 You arrive at a fire incident as the officer-in-charge and realise that there is a possibility of a backdraught. List FIVE actions that you can direct and control to reduce the danger to firefighters. (10 marks)

Bibliography: Fire Service Guide to Health and Safety, Volume 3, Guide to Operational Risk Assessment, Section 5.8, page 61.

Fire Service Manual Volume 2, Operations, Compartment Fires and Tactical Ventilation, pages 10 and 11

Generally speaking, this question was well answered, which might be expected.

Many candidates produced lengthy scripts when the question merely asked for five actions which could and should have been provided in a simple list.

Others failed to read the question properly or didn't understand the definition of a backdraught rather than the information required.

A very small number of dangerous practices were identified with a small number of candidates indicating that they would allow or encourage the backdraught to take place before committing crews or, more worrying, were prepared to vent a compartment having committed firefighters to work inside it.

Whilst it was possible for candidates to provide a reasonable response to this question based on the practical training currently being carried out in many brigades and indeed some appeared to do so, once again the best scripts were produced by those who had effectively studied the bibliography.

PAPER 2: FIRE SAFETY, EDUCATION AND ENFORCEMENT

GENERAL COMMENTS

Comments Relating to Questions

This year's Leading Firefighter paper on Fire Safety, Education and Enforcement, presented candidates with five compulsory questions set in a 'scenario style' which reflects the shift in Fire Service culture from intervention to prevention. There is a Service expectation that potential Leading Firefighters should have a general awareness of fire regulations, the ability to give basic fire safety advice, and some knowledge of pro-active prevention and education.

The result of this paper shows a slightly improved trend in many areas, when compared with last year, demonstrating that some candidates had studied sensibly the provided Study Notes, and had applied themselves to the requirements of the individual questions.

One area of specific concern relates to question one, which required a basic awareness of the application of the Fire Precautions (Workplace) Regulations 1997. Considering these regulations are arguably the most significant piece of fire safety legislation for many years, almost all candidates failed to demonstrate any knowledge of them. This situation can only suggest a training deficiency within the Service.

In general, it continues to be very disappointing to note that poor scripts are invariably the result of candidates failing to study properly, use good examination techniques, and read and understand the questions. Candidates for any Statutory Examination will never be successful if they continue to be poorly prepared and solely reliant upon practical knowledge.

SECTION A FIRE SAFETY LEGISLATION

Attempt this question

- 1 While visiting a small factory premises on a routine visit, the owner of the factory asks you, as officer-in-charge, to explain which workplaces the Fire Precautions (Workplace) Regulations 1997 apply to.

What key points should be covered in your reply?

(10 marks)

Bibliography: Study Note 1201, The Fire Precautions (Workplace) Regulations. 1997 – Awareness, page 3.

This question was answered extremely poorly by most candidates resulting in a very high failure rate. The main reason for the poor standard of response is that the majority of candidates failed to address their answers to the application of the (Workplace) Regulations, but detailed either the requirement of a fire certificate under the Fire Precautions Act, or the obligations of the employer. The (Workplace) Regulations is a major piece of legislation for the Fire Service and it is disappointing that most candidates did not have any apparent awareness of it.

SECTION B COMMUNITY FIRE SAFETY

Attempt ALL questions

- 2 Your Station Commander has asked you, as part of a campaign, to reduce the number of chip pan fires occurring within the area, to visit local community groups and explain to them how chip pan fires can be avoided in the home.

List the simple guidelines on the safe use of chip pans which you could tell members of these groups.

(10 marks)

Bibliography: Study Note 1203, Fire Safety in the Home, page 2.

A well answered question, with those who had studied the bibliography being able to show their knowledge on the safe use of chip pans and how fires can be avoided. However, there were still some candidates who did not read the question and lost marks by providing an explanation on how to fight chip pan fires rather than listing simple safety points. Good examination technique on this question would have enabled high marks to be gained.

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- 3 Smoke alarms for the home are now readily available from supermarkets as well as DIY hardware and electrical shops.

There are two types of smoke alarms which are designed to detect two different types of fire commonly found in most homes.

- (a) What are the TWO types of smoke alarms that can be purchased?

(2 marks)

and

- (b) Explain briefly the differences between the types of SMOKE that they are designed to detect. Include in your answer a type of fire that will produce each type of smoke.

(8 marks)

Bibliography: Study Note 1203, Fire Safety in the Home, pages 9 and 10.

A generally well answered question with a pleasingly high number of candidates attracting maximum marks. A common area for error was those candidates who correctly identified the two types of detector, but incorrectly described the type of smoke that each detector is sensitive to. A number of candidates wasted time by illustrating and describing the method by which each detector operates, which was not requested in the question. However, marks were available to those who identified the main distinction which was the sensitivity to particle size of smoke (large or small).

- 4 While giving a community fire safety talk to residents of a block of flats, the residents are very concerned that due to the layout of their flats, if a fire was to occur they may be trapped within their bedrooms unable to escape.

What advice would you give the residents where the escape route cannot be used?

(10 marks)

Bibliography: Study Note 1203, Fire Safety in the Home, page 13.

A high percentage pass rate was gained on this well answered question, although it was somewhat disappointing that some candidates were unable to gain any marks for a basic fire safety advice question. Some candidates failed to obtain available marks by not logically considering the content of their answer and omitting basic factors such as 'closing doors' and 'phone the Fire Service'. There was also concern relating to the type of advice given in respect of self rescue, in particular failing to express that such actions should only be taken as a last resort.

- 5 Your Station Commander has informed you that there has been a high number of false alarm calls from an automatic fire alarm system in a hotel.

The Commander has asked you to visit the hotel to discuss with the manager how these calls can be reduced or prevented altogether.

- (a) List the most common causes of false alarms of this nature. (4 marks)
- and
- (b) Suggest how the number of calls could be reduced or stopped altogether. (6 marks)

Bibliography: Study Note 1204, Unnecessary Fire Calls, page 7.

The standard of responses for this question was disappointing for what is a basic fire safety topic. Marks failed to be obtained by candidates who seemingly relied upon their practical experience only, without any reference to information contained in the relevant Study Note. General phrases such as "the appropriate detector fitted in the appropriate position" attracted few marks, unless examples of types of detector were provided.

It is worrying that some candidates advocated sending untrained hotel staff to confirm that there was a fire before notifying the Service of an alarm actuation.

PAPER 3: HUMAN RESOURCE MANAGEMENT

GENERAL COMMENTS

Comments Relating to Questions

The overall standard was disappointing. In many cases the responses indicated a lack of preparation and poor examination technique. A large number of candidates had apparently not read the questions correctly or had decided to provide answers to other unasked questions. The bibliography is clear and questions are drawn from the study notes. Candidates must consider the scenario provided in each question carefully and understand the circumstances involved and then link this to the question and how this relates to the information obtained from careful preparation. Candidates cannot expect to reach the standard required of this examination by relying solely on their own experience. Long illegible scripts incorporating padding and avoidance of answering the question will gain no marks.

SECTION A EMPLOYMENT

Attempt BOTH questions

- 1 As a Leading Firefighter you have been asked to discuss with your watch the Brigade's Equal Opportunities Policy. In your approach you have decided to emphasise why it is necessary to have such a Policy.

Describe FIVE basic reasons why the Brigade should have an Equal Opportunities Policy.

(10 marks)

Bibliography: Study Note 1302 Equal Opportunities, page 2.

This is an important and topical issue in the Service but sadly the answers to the question were poor. Many candidates clearly believed that they could rely on their own subjective knowledge or experience which regrettably attracted few marks. Those candidates who gave brief and concise reasons attracted maximum marks. Candidates who concentrated on equal opportunities employment issues attracted no marks. Lengthy essays which did not cover the five reasons did not gain the marks available.

- 2 As the Leading Firefighter of an oncoming watch you notice that cutting equipment is defective and it is taken off-the-run.

Initial enquiries indicate that the equipment was used at an incident and was inappropriate for the task. There is no record of any defect. You suspect that an offence under the Fire Service (Discipline) Regulations may have been committed.

List TWO possible offences, from the schedule to the Fire Service (Discipline) Regulations 1985 (in Scotland, the Fire Service (Discipline) (Scotland) Regulations 1985) that may have been breached. Select one of these and describe the offence in detail.

(10 marks)

Bibliography: Study Note 1303 Fire Services Code of Discipline, page 2.

The Fire Services (Discipline) Regulations 1985 is a foundation subject covered by firefighters during their basic and early development training. It is of some concern therefore to find a poor level of knowledge and understanding indicated by candidates. Many candidates did not consider the scenario and selected other than "neglect of duty" and "loss of or damage to Fire Authority property" and thus gained no marks. A knowledge of the offences in the schedule and what they meant was all that was required. Candidates who discussed their own policies for dealing with defective equipment gained no additional marks and were distracted from the purpose of the question.

SECTION B TRAINING AND DEVELOPMENT

Attempt BOTH questions

- 3 As a newly appointed Leading Firefighter you are interviewed by the Station Commander during your first duty shift. You are given a good insight into your duties and responsibilities. Specific reference is made to 'command' and you 'being in command' in operational and non-operational situations.

(a) When your Station Commander refers to 'command' what do you understand by this term?

(2 marks)

and

(b) How may the command of an operational situation and a non-operational situation (eg the running of a fire station) differ?

(8 marks)

Bibliography: Study Note 1305 Leadership, Motivation and Communication, page 2.

Command and leadership are important functions carried out by junior officers and candidates should have delivered good responses. Unfortunately, candidates indicated a lack of understanding of the subject with many scripts indicating a similar lack of study. Many candidates who chose to answer their own question or reverted to discussing their own brigade's administrative systems obtained no marks. Candidates who had read the Study Note, produced good answers.

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- 4 Define the following terms used in the competence framework for the Fire Service.
- (a) Performance standards. (2 marks)
- and
- (b) Learning. (4 marks)
- and
- (c) Assessments. (4 marks)

Bibliography: Study Note 1306 Performance, Standards and Role Maps, page 4.

This question was poorly addressed by most candidates. Candidates clearly need to study this subject in more detail and develop a familiarity with competence framework and its terminologies. Many candidates had failed to apply themselves in this way and consequently produced their own definitions or tried to "pad out" their answers in the hope of gaining marks. Again candidates who had studied the bibliography achieved good marks.

SECTION C HEALTH, SAFETY AND WELFARE

Attempt BOTH questions

- 5 Following an audit of your station by the Brigade Health and Safety Adviser your Station Commander expresses concern over the number of health issues and injuries associated with manual handling. You are asked to prepare a short talk to your watch and to focus on the typical internal and external injuries which could result in long term absence from work.
- What typical external and internal injuries which could arise as a result of inappropriate manual handling would you refer to? (10 marks)

Bibliography: Study Note 1310 The Manual Handling Operations Regulations 1992, page 3.

Health, Safety and Welfare are important issues in the working environment and a considerable amount of development work has been carried out in the Service in recent years. In general this question was well answered. However, candidates who wrote lengthy scripts wasted valuable time. In addition candidates who interpreted internal and external injuries to the workplace and not the body gained no marks.

- 6 As a Leading Firefighter you represent your station on a Brigade working group to review personal protective equipment which has reached a decision to replace gloves. The Chair of the group wishes to identify the factors to determine the suitability of the gloves.

What FIVE factors would you include in identifying 'suitability' for the gloves?

(10 marks)

Bibliography: Study Note 1311 The Personal Protective Equipment at Work Regulations 1992, page 3.

The appropriate bibliography provides five factors relative to the suitability of personal protective equipment. Unfortunately, too many candidates failed to obtain available marks by answering the question using their own seemingly limited knowledge obtained from inadequate experience. Candidates who concentrated on compatibility attracted no additional marks. As a result the question was poorly answered. Answers which concentrated simply on the question asked were brief and concise and attracted maximum marks.

PAPER 4: BUSINESS ADMINISTRATION

GENERAL COMMENTS

Comments Relating to Questions

This year saw the introduction of this paper to the Leading Firefighters' examination. It was pleasing, therefore, to see no obvious reduction in standards following the removal of similar questions from the Sub-Officers' examination.

Whilst candidates performed reasonably well overall, there were a number who with additional care might have achieved much higher marks, especially if they had followed the following simple rules.

- Always use a pen and not a pencil.
- Read questions carefully, twice if necessary and think about how you will structure your answer before you start writing.
- Think about managing your time. A number of candidates clearly did not do so and produced unfinished answers.
- Start each question on a new page and write the question number in the box provided at the top.
- A précis requires the candidate to produce a piece of writing that accurately reflects the meaning of the original text. New information should not be introduced. A simple list of points is not a précis.
- When writing a letter or memorandum the well established conventions should be followed.

It was pleasing to see a modest improvement in spelling. Nevertheless, this is an issue that many candidates need to give close attention to.

Attempt BOTH questions

- 1 You are Leading Firefighter Brown on Red Watch at Brompton Fire Station in Wessex Fire and Rescue Service. You have suggested to your Watch Commander that a station open day should be held in order to promote fire safety in the home and, at the same time, to raise money for the Fire Services National Benevolent Fund. Your Watch Commander has agreed to support your proposal but has told you to write a memorandum to the Station Commander seeking approval for the open day to take place.

You are to write a suitable memorandum to the Station Commander, Station Officer Evans, explaining your proposal and the benefits that it will have for both the community and the Fire Services National Benevolent Fund. You should outline your thoughts on how the day should be organised and confirm to the Station Commander that your watch fully supports the event. You should remember that you need the Commander's support if your proposal is to be a success.

Your memorandum should be no more than 275 words in length.

You are to state the number of words used at the end of your script. **(25 Marks)**

Candidates were advised to explain the proposal, identify the benefits for the community and the FSNBF, and to outline how the day should be organised.

The majority of candidates heeded this advice and therefore attracted good marks. Several, however, failed to obtain available marks by not following these instructions. Most common amongst these were:

- writing a letter, rather than a memo;
- using more than the permitted number of words;
- not stating the number of words used; and
- not addressing the points required by the question.

Candidates are strongly advised to read and to use the information contained in the question in preparing the answer to questions of this type.

- 2 As a Leading Firefighter in the Training Department you have been asked to prepare a précis of the following text for inclusion in a training document. Your précis should consist of **between 120 – 135 words**. You are to state the number of words used at the end of your script.

Smoke is generally a mixture of fine solid particles, droplets of water and other liquids and gases given off by the materials involved in the fire. It is generally toxic. The amount of smoke generated by a fire is dependent on the size of the fire and the material being burnt. Its behaviour and movement depends upon its temperature. The fire will heat the air and smoke surrounding it and since hot air is more buoyant than cold air, it will tend to rise very rapidly and with great force. Where the smoke cools to the same temperature as the surrounding air, this movement will cease.

It is important to remember two important features of smoke:

It can burn. Some of the products of combustion may not be fully burnt because of a shortage of oxygen or the absence of a source of ignition. Given a new source of fresh air, and a source of ignition, it can re-ignite, sometimes with explosive results – a backdraught. If the smoke is hot enough, re-ignition can occur without a separate source of ignition.

It can be hot. It may be sufficiently hot to ignite flammable materials with which it comes into contact. It will also be radiating heat and this may be sufficient to ignite other sources of fuel in a compartment.

Two of the phenomena which can be caused by smoke, flashover and backdraught, are described in the supplement to the Manual of Firemanship, The Behaviour of Fire – Compartment Fires. Tactical ventilation is one of the techniques which can be used to prevent flashover and backdraught, or to mitigate their effects.

(25 marks)

This question required candidates to prepare a précis of the text for inclusion in a training document. Most candidates did hit the target number of words, however a significant number wrote more than the maximum indicated. Since the purpose of the question was to test the candidates' ability to summarise, marks were deducted when the target was exceeded.

Marks were not awarded to candidates who simply selected key words from the text and then presented the information in random order which did not reflect the original script. Examiners were particularly concerned that the submissions presented by some candidates indicated a lack of understanding of the phenomena of backdraught and flashover.

A small number of candidates summarised the text in list format and subsequently failed to attract marks. It is important that potential candidates understand the nature of a précis and take the opportunity to practise.

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