



HOME OFFICE
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To: All Chief Fire Officers



29 January 1997

Dear Chief Officer

DEAR CHIEF OFFICER LETTER 1/1997

This letter deals with a number of matters which are summarised below. More detailed information is contained in the relevant Items attached to the letter.

A BS EN3: A NEW STANDARD FOR PORTABLE FIRE EXTINGUISHERS

This item gives information about the introduction of a new standard for portable fire extinguishers and the withdrawal of BS 5423:1987.

B PRACTICAL PRECAUTIONS AT EXCAVATIONS (TRENCH/PIT RESCUES)

This Item provides Chief Fire Officers with information and advice on conditions influencing trench stability, risk assessment and safety precautions to apply at excavations. It supplements the guidance given in Part 1 of Book 12 of the Manual of Firemanship and will be incorporated into the relevant section of the Manual in due course.

C RETENTION OF RECORDS: CLAIMS BY CURRENT AND FORMER FIREFIGHTERS IN RESPECT OF WAR DISABILITY PENSIONS

The regional War Pension Committees for England, Wales and Scotland have drawn attention to the need for fire authorities to assist in the retention of medical or other records in case they may be required later by a firefighter or ex-firefighter when making an application for a War Pension.

D DEGRADATION OF CHEMICAL PROTECTIVE CLOTHING

Chief Officers will wish to note the attached report of a research project carried out by the Home Office Fire Research & Development Group.

E THE PRINCIPLES OF GOOD MANAGEMENT

This item draws attention to British Standard 8800: 1996, a guide to the integration of occupational health & safety management within an overall management system.

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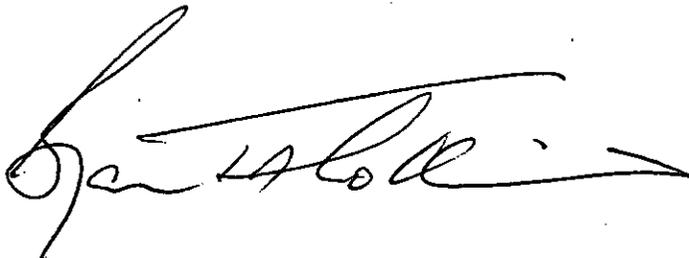
F INCIDENTS INVOLVING SILOS

This Item provides Chief Fire Officers with guidance clarifying the precautionary measures to be taken at incidents involving silos. It reinforces the need to use a secure line or harness and line at all incidents involving a silo and that all lines so employed are under effective control and supervision for the duration of the incident. This, and related guidance, will be incorporated within the Manual of Firemanship in due course.

G THE SAFE PERSON CONCEPT

There are issues which will from time to time impact upon the safety of fire service personnel engaged in fire service operations and need examining, perhaps as a matter of urgency, to judge how best the service might address them. From this realisation was conceived the notion of a Safe Person Concept

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Bryan T A Collins', with a long horizontal flourish extending to the right.

BRYAN T A COLLINS
Her Majesty's Chief Inspector of Fire Services

BS EN3: A NEW STANDARD FOR PORTABLE FIRE EXTINGUISHERS

This item gives information about the introduction of a new standard for portable fire extinguishers and the withdrawal of BS 5423:1987.

Background:

2. British Standard BS 5423:1987 recommends that the bodies of portable fire extinguishers containing water should be either self-coloured metal or red and other fire extinguishers should be predominantly self-coloured metal or red with a second colour to indicate the extinguishing medium. Colour coding of the entire extinguisher body is also permitted. The European Standard EN3 currently recommends that the extinguisher body should be red with pictograms to indicate the classes of fire for which the extinguisher is suitable.

3. Current practice by United Kingdom manufacturers varies. Most colour code the whole extinguisher body to denote the contents. A few use red as the predominant colour with colour coded labels or pictograms.

Proposed Changes:

4. From January 1997, under the harmonisation arrangements for the Single Market in Europe, one standard will prevail. The European Standard EN3-5 will require that, subject to national regulations, the bodies of all new portable fire extinguishers are coloured red but section 7.1 of EN3-5 also allows the use of a "zone of colour of up to 5% of the body" in order to identify the extinguishing agent. In adopting the new European Standard as BS EN3 the United Kingdom has decided to exercise this option.

5. The British Standards Institution therefore proposes to withdraw BS 5423 on 1 January 1997, replacing it with BS EN3, and to supplement this with a new standard, BS 7863, which will recommend a revised colour coding system to denote the contents of portable fire extinguishers. This colour indication will appear on the front of the extinguisher so that it is visible through 180 degrees when the extinguisher is correctly mounted.

Action by Fire Brigades:

6. It should be stressed that existing fire extinguishers remain acceptable until such time as they need to be replaced at the end of their useful lives. However, when specifying new portable fire extinguishers for the purposes of enforcing fire safety legislation or giving advice, fire brigades may wish to quote the new European Standard BS EN3 and the supporting national specification BS 7863.

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7. There are no cost implications to fire brigades as a result of this part of the letter.

File reference: FEP/95 30/45/1

Telephone contact number: 0171 217 8043 (Policy)
0171 217 8037 (Technical)

PRACTICAL PRECAUTIONS AT EXCAVATIONS (TRENCH/ PIT RESCUES)

Background

1. Part 1 of Book 12 of the Manual of Firemanship gives guidance on dealing with a collapsed trench rescue. The guidance should now be supplemented by the following information and advice on conditions influencing trench stability, risk assessment and safety precautions to apply at collapsed trench incidents.

2. This supplementary guidance is designed to address recent Health and Safety Executive (HSE) concerns about a number of trench incidents where it was considered that firefighters had not taken adequate protection for their own safety. The guidance has been prepared following advice from a specialist construction inspector.

Trench stability

3. When excavations are carried out, ground conditions can vary widely, even over relatively short distances. Soil cannot be relied upon to support its own weight for any length of time. The apparent stability of vertical faces in clay or silty sands can deteriorate rapidly and collapse suddenly and without warning. Any unsupported face in excavations could collapse, unless it is adequately supported or sloped back at a safe angle. A cubic metre of soil can weigh 1.25 Tonnes and so even a small fall is capable of inflicting serious or fatal injury, even if the casualty is not buried.

4. There is a serious risk to anyone entering an unsupported or inadequately supported excavation. The stability of an excavated face is influenced by factors such as:

- * type(s) of soil
- * height and angle of face
- * loading at ground level adjacent to the face (eg. Spoil heaps, vehicles, people)
- * presence of ground water or surface water (wet soil may become more fluid)
- * presence of buried services behind the face of the excavation
- * presence of other buried obstructions beyond the face, such as man-holes, foundations and tree roots
- * presence of natural discontinuities in the soil behind the face, such as sand pockets, changes in strata and geological features
- * presence of previously disturbed ground near to the trench, such as reinstated trench or foundation excavation
- * climatic conditions

5. Deep excavations may also pose the added risks associated with a confined space. The atmosphere has potential to be oxygen deficient, flammable or toxic. These conditions may occur when fumes from diesel or petrol engines enter an excavation, or if the excavation is through contaminated land or an old rubbish tip or near a leaking sewer.

Risk assessment and consideration of safety precautions

6. The primary risk in most excavation rescue situations will be a further collapse with potential for multiple fatalities. It is therefore necessary for precautions to be taken which are proportionate to the risk. In assessing the demands of the incident and reaching decisions about the application of safety precautions the officer in charge should, where practicable or reasonable, take account of:

- (a) available on-site knowledge and expertise. On-site employees may be competent in excavation work or have access to a safety adviser. Even where mistakes may have been made, on site staff may know what should have been done or the reasons for the collapse.
- (b) an assessment of the additional risk of collapse of structures adjacent to the excavation such as walls at underpinning operations.
- (c) access to technical expertise, (e.g. County Engineers Department).
- (d) availability of on-site plant, equipment or materials, propriety trench support equipment or materials suitable for use as trench/pit supports.

Application of safety precautions

7. The officer in charge should ensure that the number of fire-fighters working in the excavation are kept to the minimum required to carry out the task, and that head protection is worn at all times. Subject to the risk assessment, the officer in charge should consider appointing a firefighter to look out for signs of collapse and monitor developments. Where practicable, the officer in charge should also ensure:

- (a) access to the excavation is only at the point protected by the support system.
- (b) people and vehicles are kept away from the edges of the trench, thus reducing the risk of disturbing loose material in the face or at the edge. If it is necessary to approach the edges, do so away from where people are in the trench.
- (c) equipment or materials (such as spoil heaps) are removed from the edges of the trench. Loading at ground level adjacent to the trench increases the likelihood of unstable faces collapsing as does vibration from machinery or vehicles. A distance at least equal to the depth of the trench should be kept clear.
- (d) the sides of the excavation are supported where people will be in the trench. If propriety support systems or competent advice is not available, trench supports should be adequately robust and suitably braced to prevent movement. Any trench support should extend to ground level.

- (e) the equipment carried on appliances, such as hydraulic rams, ladders and air bags is utilised, where appropriate;
- (f) throughout the rescue operation a look out is kept for collapse and the presence of water which may make soil conditions more fluid. Anything untoward must be identified and acted upon promptly.

Training

8. The Construction Industry Training Board (CITB) may be able to assist in provision of specialist training for the emergency services.

Action for Chief Fire Officers

9. Chief Fire Officers should ensure that the guidance is brought to the attention of all personnel with emphasis given to the need for personnel to recognise and understand the influences of the various factors identified so that appropriate precautionary measures can be taken at excavation incidents.

Financial and manpower implications

10. There are no cost or resource implications arising from this guidance.

Contact Telephone Number: ☎ 0171 217 8746

**RETENTION OF RECORDS: CLAIMS BY CURRENT AND FORMER
FIREFIGHTERS IN RESPECT OF WAR DISABILITY PENSIONS**

The regional War Pension Committees for England, Wales and Scotland have drawn attention to the need for fire authorities to assist in the retention of medical or other records in case they may be required later by a firefighter or ex-firefighter when making an application for a War Pension. Eligibility to claim for a War Disability Pensions is not solely those that served in World War II, it also applies to members of the armed services who have served in Post-1945 conflicts.

2. When a potential War Disability Pension claimant makes an application for a War Pension (or for modification of an existing pension) the onus is on the claimant to provide supporting evidence for his/her claim. The post-service medical records of potential claimants are of considerable value and importance in determining such cases. Where no corroborative evidence is available from official (usually Ministry of Defence) records, claimants need to provide sufficient alternative evidence to establish entitlement.

3. **Chief Fire Officers are requested to ensure that personnel staff are made aware of the need to retain medical or other records.** It is not expected that there will be any significant manpower or cost implications arising from this request.

Telephone contact number: 0171-217 8688

File Reference: FEP/96 82/98/1

DEGRADATION OF CHEMICAL PROTECTIVE CLOTHING

Chief Officers will wish to note the attached report of a research project carried out by the Home Office Fire Research & Development Group.

This reports on work carried out to investigate the possible deterioration of the chemical protective qualities of chemical protective clothing with use.

The European Standards for chemical protective clothing for firefighters are currently under discussion and are likely to be published within the next year. Once these are published, the Joint Committee on Appliances, Equipment and Uniform will review its guidance on selection and use of the chemical protective clothing, as set out in item B of Dear Chief Officer Letter 2/1996, and the results of this research will be taken into account during the review.

Any queries on this particular research should be addressed to Kirsty Bosley at the Fire Experimental Unit (Tel: 01608 650004).

General queries on chemical protective clothing should be addressed to either Brian Hansford in HM Fire Service Inspectorate (0171 217 8720) or Dennis Ricketts in the Fire Services Unit (0171 217 8745).

THE PRINCIPLES OF GOOD MANAGEMENT

British Standard 8800: 1996 A guide to the integration of occupational health & safety management within an overall management system.

A comprehensive legal framework already exists for occupational health and safety, requiring organisations to manage their activities in such a way as to anticipate and prevent circumstances which may result in occupational injury or ill-health.

The guidelines offered in British Standard 8800: 1996, which was published in May, are based on the general principles of good management and provide guidance on how the management of occupational health and safety (OH&S) may be integrated within an organisation's overall management system.

The Standard shares common management system principles with the BS EN ISO 9000 'Quality Management' series and the BS EN ISO 14000 series/BS 7750 'Environmental Management' Standards.

Note: BS EN ISO 9001: 1994 superseded BS 5750-1: 1987

And the Standard is also compatible with:-

- The HSC's ACOP 'Management of Health & safety at Work': 1992
- The HSE's booklet HS(G)65 'Successful Management of Health & Safety Management': 1993

The guide offers two approaches. One is based upon the HSE guidance HS(G)65 'Successful Health & Safety Management' and an alternative approach is based upon BS EN ISO 14001, the environmental management systems standard which was published in September 1996.

Copies of the Standard are available from BSI, Customer Services (cash office), Lynford Wood, Milton Keynes, MK14 6LE at a cost of £23-50 to members and £47 to non-members.

INCIDENTS INVOLVING SILOS

Background

1. Item B of DCOL 5/1989 advised Chief Fire Officers of safe operational practices to adopt at incidents involving silos. The guidance supplemented that in DCOL 18/1971, Technical Bulletin 2/1971, and Parts 6B and 6C of the Manual of Firemanship.
2. The guidance has been reconsidered in response to a recently published report into a fatal accident involving a firefighter at an industrial silo in 1995. The previous guidance should continue to be applied in full, subject to the clarification given below.

Supplementary Guidance

3. The findings of the fatality inquiry reinforced strongly the essential requirement for a rescue line or harness and line to be securely attached to each person entering the silo. The use of a harness or line applies for all silo incidents or containers of a similar nature irrespective of whether it is anticipated that the rescuer is likely to be in the silo for a short period. The line or harness must have its other end secured to a stable point outside the silo.
4. It is essential that the officer-in-charge ensures that all lines employed under such circumstances are under the effective control and supervision of a competent person for the full duration of the incident. In the event of a hand-over of control, effective de-briefing is a fundamental requirement.
5. The use of a harness may be particularly beneficial if it is necessary to lift a casualty from the silo, but absolute care must be taken to ensure the harness does not prove a hindrance if it is used simultaneously with BA or other respiratory devices. A harness may also prove difficult to fit correctly where, for example, a casualty is submerged in the contents of the silo. In such circumstances, use of a lowering or GP line may be more appropriate as it would be easier and quicker to apply.

Action for Chief Fire Officers

6. Chief Fire Officers should ensure that all personnel are informed of the importance of using a secure line or harness and line when conducting a rescue at a silo and that all lines employed are under effective control and supervision for the full duration of the incident.

Financial or manpower implications

7. There are no manpower or cost implications arising from this guidance.

Contact Telephone Number: 0171 217 8746

THE SAFE PERSON CONCEPT

(Fire Behaviour Project Team)

There are issues which will from time to time impact upon the safety of fire service personnel engaged in fire service operations and need examining, perhaps as a matter of urgency, to judge how best the service might address them.

From this realisation was conceived the notion of a *Safe Person Concept* about which Mr Bryan TA Collins HMCIFS wrote personally to heads of the principal fire service professional organisations to solicit their views, support and co-operation. The concept embodies the principle that issues are identified and examined by a core group comprised of nominated representatives of the principal bodies, or perhaps a project team appointed by the group. The result of the examination could be used to prepare interim guidance, monitor progress and/or be reported to an appropriate Joint Committee of the CFBAC, especially where budgetary of fire authority issues arise. The work is not intended to replace the function of a Joint Committee process, but rather enhance it in order to simplify and expedite matters.

With the agreement of the principal professional fire organisations the *Safe Person Group* has been established under the chairmanship of Her Majesty's Senior Operations Inspector Peter Morphew.

The first key issue the Group has identified is the *behaviour of fire* and a *Fire Behaviour Project Team* has been set up to examine what is known about the behaviour of fire, its growth and fire phenomena, the tactics for dealing with compartment fires and developments in the field of real-fire training facilities, with a view to reporting on the operational implications for firefighters and preparing guidance on training intended to prepare firefighters to deal with fires in buildings and structures confidently and safely.

The origins of the work lie in a scoping study undertaken by the Home Office Fire Research and Development Group (FRDG) in 1992 to encompass research into flashover, backdraught and fire venting techniques. Research was commissioned which culminated in the publication of a report "A Survey into Backdraught" in 1994. Following the report further research on fire venting techniques and the science of fire suppression and extinction was requested. The further work included the design and development of a scale compartment which could be used to study, under controlled conditions, the behaviour of fire in enclosed structures, the effect of venting fires and possibly the firefighting techniques best suited to deal with such fires effectively. The fire behaviour simulator is currently being commissioned at FRDG's Fire Experimental Unit (FEU) at Moreton-in-Marsh.

The research is still ongoing, but it became clear that sufficient was already known to publish information which would be helpful to firefighters. A supplement to the Manual of

Firemanship entitled "The Behaviour of Fire - Compartment Fires" was published in February 1995 and this was followed in July 1996 by a complementary supplement in the same series entitled "The Tactical Ventilation of Buildings and Structures".

Notwithstanding these publications, the availability of other related technical literature and the continuing research, a survey of brigades into the extent of current training activity in these fields and the availability of suitable training material indicated that there were wide differences in understanding and approach. It was considered that training in these fields needed further development and would benefit from national guidance, especially since, at present, most firefighters will not be likely to experience the hazard presented by fire in buildings and enclosed structures until they first meet it operationally.

It was judged that this guidance necessarily should encompass both training in the form of education about the behaviour of fire and in the theory and practice of operational techniques and tactics to control or mitigate the effects of the identified phenomena. It was considered that there was a need for the training to be as widespread as practicable and in a form easily digestible to its target audience. With these considerations in mind it identified the need for the further training of all personnel likely to engage in firefighting and that it should, at the Chief Officer's discretion, be available in some form at three levels; station, brigade and the Fire Service College.

The Joint Committee on Fire Brigade Operations was asked to recognise the potential for an increasing incidence of fires involving backdraughts, flashovers and rapid fire growth, and the need to include advanced ventilation techniques and re-affirm jet/spray firefighting tactics as part of the fire service tactics for dealing with such incidents. JCFBO welcomed the development and acknowledged the implications for training.

The Joint Training Committee was asked to prepare methodologies for training to meet these needs and has agreed to:-

- * HMFSI and the Fire Experimental Unit (FEU) of the Home Office Fire Research and Development Group working together to develop firefighting techniques and tactics which are appropriate for use in any brigade when dealing with a range of operational incidents which may typically lead to the occurrence of flashovers or backdraught.
- * The production of training video films dealing with combustion, backdraughts, flashover, ventilation techniques and compartment firefighting tactics suitable for informing and educating firefighters, including information about the circumstances leading to the effects as well as the methods for dealing with them.
- * The Fire Service College being asked to consider (a) including more advanced training in these fields in progressive training courses, with such training including experience of practical operational techniques for the management and control of such incidents and (b) including the subject matter on the agenda for BTO's seminars.

- * All lessons learned from the use of the fire behaviour compartment simulator being appropriately incorporated into the advanced training at the Fire Service College, and educational material for firefighters.
- * Brigades being recommended to include within their existing training programmes at station, division and/or brigade level, drills and exercises which involve the practice of the operational techniques identified as limiting or managing the effects of backdraughts and flashovers.
- * Brigades being reminded of the availability of advanced training in certain of the techniques in brigades where these are already developed.
- * HMFSI re-examining the recommended content of the recruit training course to ensure the subject fields are appropriately covered within basic training.
- * The Safe Person Group, or their appointed Project Team as appropriate, making further enquiries of the Fire Research Station about the production of suitable training material in connection with rapid fire growth, especially in buildings of lightweight construction.

The *Fire Behaviour Project Team's* task will be to ensure JTC's wishes are complied with, to report progress and conclude the study within a reasonable time to the satisfaction of the Joint Committees for Fire Brigade Operations and Training.

Whilst further research into the behaviour of fire is ongoing, brigades are advised to:-

- (1) Ensure that the information and guidance offered in the two "*Behaviour of Fire*" Supplements to the Manual of Firemanship is incorporated into the theoretical and practical firefighting training given to operational personnel at all levels within the brigade.
- (2) As far as is reasonably practicable, to add to the credibility of training by including an element of realism within the learning experience. In this respect due regard should be given to the guidance offered in the document entitled *The Principles of Operational Training*" issued under cover of Fire Service Circular 5/1996 published in June 1996.
- (3) Satisfy themselves that real-fire training, in whatever form and wherever undertaken, is relevant to the identified need, planned to fulfil defined training objectives, based on performance requirements, and, particularly in respect of practical training which involves real fires or simulated using gas flames, is effectively controlled, adequately supervised and operated in a manner which ensures as far as is reasonably practicable, the safety of participants.

Regarding the tactical ventilation of fires. The Manual of Firemanship Supplement on *The Behaviour of Fire - The Tactical Ventilation of Buildings and Structures* was published in July 1996 to reflect the current state-of-the-art, secure in

the knowledge that research was continuing which would eventually add to the pool of knowledge. However, it is known that many brigades are keen to introduce the technique of 'forced ventilation' (e.g. using fans - PPV) into their arsenal of firefighting tactics: but it should be appreciated that the miss-application of PPV can have disastrous consequences. Consequently, additional interim guidance on forced ventilation is currently being prepared. Brigades should receive this guidance by the end of the year.

Any matters concerning this item should be addressed to:-
HMI A Wells (training), Tel: 0171 217 8072