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23 December 1987/11

To All Chief Officers

Dear Chief Officer,

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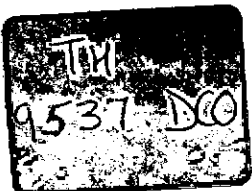
Yours Sincerely

R. D. H. DOYLE.

The Fire Service College



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GUIDANCE ON HIGH SPEED DRIVER TRAINING

1. Dear Chief Officer Letter 1/86 gave guidance on the training of emergency fire appliance drivers. Paragraph 5 advised that before qualifying for emergency fire appliance status, drivers should have received tuition and have experience of driving at high speeds. Chief Fire Officers were advised to consult with their local Chief Constables to seek agreement that this form of training may be undertaken.
2. The Home Office has been asked to give further advice on the question of high speed driver training and, in particular, on driver training at speeds which exceed the speed limits.

Section 87 of the Road Traffic Regulation Act 1984 provides that:

"No statutory provision imposing a speed limit on motor vehicles shall apply to any vehicle on an occasion when it is being used for fire brigade, ambulance or police purposes, if the observance of that provision would be likely to hinder the use of the vehicle for the purpose for which it was being used on that occasion."

3. This section confers the power for speed limits to be exceeded during driver training. Nevertheless the section does not, in any way, qualify liability for reckless or careless driving etc, or for civil liability for an accident caused by driving at unsafe speed. Whilst therefore it is in the public interest that emergency fire appliance drivers should be fully trained so that, when qualified, they can properly meet emergencies, it is equally in the interest of the public, the driver, and the brigade that the risks attendant upon such an exercise should be minimised as far as possible.
4. The power to exceed speed limits during driver training is conferred not by Chief Constables, but by the Road Traffic Regulation Act 1984. Nevertheless, Chief Fire Officers are recommended to liaise with the police as to the times and places which may be most appropriate for such training to be carried out. During training in urban areas, however, all 30 and 40mph speed limits should be strictly observed.
5. The Association of Chief Police Officers have been consulted about the terms of this guidance.

File reference FIR/84 620/13/10
Telephone number of contact: 01-213-4150

NATIONAL FIRE SAFETY CAMPAIGN AND PILOT SMOKE ALARM CAMPAIGN
1987/1988 - NO /1987

The purpose of this letter is to outline Home Office fire safety publicity plans for 1987/1988. Chief Officers will wish to know that in order to build upon the success of the last two years it has been agreed that the national television advertising campaign on "What to do in the event of fire" should be run again for a third year.

2. The Home Office has also decided to mount a pilot television advertising campaign in the Tyne-Tees area, with the aim of informing the public of the key role of smoke alarms in giving early warning of fire and increasing chances of escape. Pre- and post-campaign quantitative research will be carried out to determine its success and in the light of this consideration will be given to extending the campaign nationally in 1988/1989.
3. The pilot campaign will centre on a 30 second television commercial which will be backed up by a poster and leaflets. Manufacturers and distributors have been approached for their support to ensure that supplies of suitable smoke alarms are widely available for purchase in the area concerned. Brigades falling within the Tyne-Tees television area have been asked to support the pilot campaign using their existing media and other contacts. They will be supplied with publicity material by the Home Office.
4. Both the campaigns will run from Christmas 1987 for nine weeks, with the national campaign running in all television areas except Thames, London Weekend and Tyne-Tees; during this period the London Fire and Civil Defence Authority (LFCDA) following through an initiative it had decided to take independently of the Home Office is also to mount a campaign on smoke alarms. The

Home Office has accordingly agreed that in the interests of economy and effectiveness its pilot commercial may be shown as part of the LFCDA campaign at the authority's expense. Brigades falling within the Thames and London Weekend television area will be kept informed of developments.

5. It will, of course, be for each brigade to determine what action can be undertaken in support of the Home Office 1987/1988 campaign generally. On the assumption that such activity is contained within existing resources, it should not involve any significant additional direct cost or manpower implications to fire authorities. The resource implications of this letter are therefore minimal.

Home Office contact tel no: 01-213 4254

FEP/87 18/45/5

ITEM ~~C~~ OF DCOL 11/1987Safe working distances from high voltage overhead electric power cables

On page 82, Book 5, Manual of Firemanship, advice is given reference safe working distances for TLS near high voltage electric cables.

Following discussions with the Electricity Council, it is recommended that, when operating a TL, HP or any other equipment, eg: lighting unit, the absolute minimum distance between any such equipment and the overhead power line system should be 7 metres. Operators should bear in mind that, in high wind conditions, both the cables and fire service equipment will be oscillating and due allowances should be made. HP operators are further reminded of the position of the knuckle in relation to the cage, chassis and overhead power line system. The reference to distances for working under overhead power lines contained in DCOL 16/1978 remains valid.

Under training conditions an Electricity Council general recommendation is that a minimum distance of 15 metres should be kept between the overhead power line system and fire service equipment.

Amendment to Manual of Firemanship

It has been noted that, with regard to the 25,000 V overhead line equipment on railways, there is a discrepancy between advice on page 82, Book 5 and page 231, Book 4, Manual of Firemanship. The greater distance of 3 metres, as stated in Book 5, is recommended. Book 4 will be amended in due course. All reference to "fires involving electric railways" and "fires in aircraft" in Part 6b, Manual of Firemanship, should now be ignored following publication of Book 4.

REVISION OF BS 5839: FIRE DETECTION AND ALARM SYSTEMS FOR BUILDINGS
PART 1: 1980: CODE OF PRACTICE FOR SYSTEM DESIGN, INSTALLATION AND SERVICING
EFFECTS ON THE PROVISION OF SMOKE DETECTORS FOR LIFE SAFETY

1. This part of the letter gives advance notice to fire authorities of the forthcoming revision of BS 5839: Part 1 which is expected to be published by mid-1988. The new code of practice will be a revision of BS 5839: Part 1: 1980, which will be withdrawn.
2. The new code of practice will clearly define the requirements for fire detection and alarm systems installed for both property and life safety and will also make recommendations on "intelligent" automatic fire detection systems, radio-based systems and the categorisation of systems according to risk. The life safety recommendations will supersede those contained in Dear Chief Officer Letter 59/78, which were encompassed in BS 5839: Part 1: 1980, and which will be withdrawn, and where relevant the recommendations contained in previous guidance issued by the Home Office relating to specific premises.
3. The new code will take into account the implications of a recent research programme concluded by the Fire Research Station on behalf of the Home Office on the siting of smoke detectors in corridors in non-domestic premises. Fire authorities will wish to note the significance of the findings of this research, details of which are given below, together with advice on the forthcoming new BSI recommendations as to the type of fire warning system to be provided in various types of occupancies.
4. Previous guidance on the siting of smoke detectors in life safety situations including sleeping accommodation given in Dear Chief Officer Letter 59/78 and in BS 5839: Part 1: 1980 was based on the expected behaviour of smoke entering a corridor and flowing as a hot layer just below the ceiling. However subsequent work cast considerable doubt on the expected behaviour of smoke and called into question the basic assumptions about smoke flow from rooms into corridors and along corridors, and also the validity of the spacings between detectors recommended in BS 5839: Part 1: 1980. The Home Office therefore commissioned the further research to evaluate the performance and optimum siting of smoke detectors when installed primarily for life safety.
5. Studies were made of the response of corridor-sited smoke detectors to smoke entering the corridor as a result of flaming fires in rooms adjoining the corridor and having closed doors. A large number of experiments was undertaken over a period of 2½ years and, although the number of variables investigated was by no means exhaustive, it is believed the conclusions would be unlikely to be changed by any further work in this area.
6. The tests showed that the differing effects of, among other things, heating, ventilation, lighting and door crack size make the behaviour of smoke in a corridor from a fire in an adjoining room extremely complex and unpredictable, and it has been concluded that it is not possible to determine a simple smoke behaviour pattern to cover the wide range of real situations. It was found that smoke detectors sited solely in a corridor provided little or no time for escape in a number of the tests and, although the most effective arrangements currently set out in BS 5839: Part 1: 1980 may provide adequate time for escape in certain circumstances, realistic conditions have been identified where these arrangements could leave insufficient time for escape. In view of these findings it is now recommended that in addition to corridor detection either a heat detector or smoke detector should be provided in each of the rooms opening on to the corridor.

7. The experimental data showed that for flaming fires behind closed doors, heat detectors in the rooms will operate well in advance of corridor smoke detectors and at a stage when smoke may not even be visible in the corridor. Although there were no specific experiments in which smoke detectors were located in rooms, it would be expected that they would have operated even earlier than heat detectors in the rooms but could be more prone to false alarms. For the purposes of protecting the escape route through the corridor, either type of detector can be mounted within the room above the door leading to the corridor, although this position would not normally be appropriate for protecting the occupants of the room in which the fire originates.

8. In order to provide early detection of flaming or smouldering fires in the corridor or in a room with the door open, smoke detectors in the corridor, in accordance with the revised British Standard, will still be required.

9. The revised British Standard code of practice will also contain recommendations on the type of fire warning system to be provided in varying types of occupancies according to risk. The type of system to cover a specific occupancy will, of course, only be able to be determined after taking all relevant factors into consideration. However the following broad guidance is offered to assist fire prevention officers in making the appropriate determination, whether acting in their advisory or enforcement capacities. Consequently, Chief Fire Officers are advised to examine their policy and incorporate the following principles when giving general advice, as an interim measure, pending publication of the new British Standard.

Automatic fire detection systems for the protection of property - Type P systems

P1 System (installed throughout the protected building)	This system would be appropriate where the earliest detection of fire is required in order to reduce property losses.
P2 System (installed only in defined parts of the building)	This system would provide a lower but still useful level of protection to property, covering only those parts of the building having a high fire risk, particularly where continuous supervision cannot be ensured.

Notes (Type P systems):

- i) The owners/occupiers of buildings for which it is intended to provide Type P1 or Type P2 systems should be advised to contact their insurers.
- ii) Manual call points should also be provided.

Automatic fire detection systems for the protection of life - Type L and Type M systems

L1 System (installed throughout the protected building)	This type of system will provide the greatest degree of protection to life safety and may be most appropriate in sleeping risk occupancies where the occupants would need full assistance to be able to respond effectively to an
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alarm because of their incapacity eg residential homes for the aged or for the physically or mentally handicapped.

L2 System (installed only in defined parts of the building)

This type of system provides a reduced but still useful level of protection and may be appropriate in certain sleeping risk occupancies where the occupants would need a lesser degree of assistance or supervision to be able to respond effectively to an alarm. This type of system may also be appropriate in certain other premises where the precise nature of the occupants cannot be determined at the time of installation eg some residential care premises, hostels and hotels.

L3 System (installed only for the protection of escape routes)

This type of system will also require the installation of detectors in each of the rooms adjoining the escape routes. It may be suitable in premises, particularly some sleeping risk occupancies, where the occupants are active and are capable of responding to an alarm without assistance eg normal residential schools, colleges, halls of residence, some children's homes and similar disciplined establishments. However, careful consideration will need to be given to the ages of the residents, particularly in children's homes, and to the level of supervision in the premises.

Notes (Type P and Type L systems):

1. All automatic fire detection systems should also include manual call points.
2. When advising on the choice of smoke detectors it should be borne in mind that:
 - i) Ionisation detectors are particularly sensitive to smoke containing small particles ie rapidly burning flaming fires;
 - ii) Optical detectors are more sensitive to larger particles found in optically denser smoke.
 - iii) Both types of smoke detector have a sufficiently wide range of response to be of general use.
 - iv) In some premises there may be specific risks for which one type of smoke detector is particularly suitable (or particularly unsuitable). This should be determined at an early stage.

Manual (only) systems - Type M systems**M System (no sub-divisions)**

A type M system, operated by manual call points only, may be appropriate in wakeful occupancies such as factories, offices and shops where normally active occupants will be fully capable of responding to an alarm. Such a system, by which an alarm can be given throughout the building, would normally meet the minimum statutory requirements for means of giving warning in case of fire. Where a type M system alone would not provide an acceptable level of protection, it may be considered appropriate to recommend the provision of a type L system incorporating automatic fire detection.

10. The foregoing guidance does not imply that existing fire warning systems, where approved by the fire authority, should be upgraded nor is it intended that this guidance should itself give rise to new programmes of inspection work. It may however be taken as indicating in broad terms the standards which may be required in new installations or when major alteration take place in existing buildings to ensure that fire warning systems comply ultimately with the recommendations of the revised British Standard when published. Account will be taken of the recommendations of the forthcoming new British Standard in any revision of guides issued by the Home Office.

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

Home Office
Fire and Emergency Planning Dept
December 1987

Reference FEP/86 17/20/4

Telephone number of contact: 01-213 3501 (up to and including 10 January 1988)

01-273 2867 (new telephone number from 11 January 1988)

THE EFFECTIVENESS OF SMOKE DISPERSAL AS A METHOD OF PROTECTING MEANS OF ESCAPE IN INTERNAL COMMON ACCESS CORRIDORS IN FLATS AND MAISONNETTES

1. Current guidance on smoke dispersal arrangements is contained in British Standard Code of Practice CP 3: Chapter IV: 1971: "Precautions against fire". Part 1, upon which fire authorities generally base their advice, deals with flats and maisonnettes over two storeys in height. However since this guidance was formulated various doubts have been expressed as to the effectiveness and likely success rate of smoke dispersal by the cross ventilation method of design as specified in CP 3.
2. In an attempt to measure the probable success rate of cross ventilation the Home Office sponsored research by the Fire Research Station using the large scale test facility at Cardington. The tests also evaluated the possibility of replacing natural cross flow ventilation with a powered extraction system from corridors.
3. The tests confirmed that natural cross ventilation is heavily dependent upon weather conditions, and wind speed and direction, in particular, are crucial to its success. It was predicted that the same conditions would also influence the effectiveness of powered systems to a substantial degree, and that these systems could fail with minor changes in wind direction or speed, and in building design.
4. There is still need for further research, for example, involving the computer model that was derived from this recent series of experiments, and further experimental work on other parameters including various aspects of door and frame construction and the generation of smoke within the door crack itself. However present indications are such that the success rate, for both natural and powered systems in maintaining a suitably smoke-free corridor for the protection of the means of escape, is lower than that which would reasonably be expected in most circumstances for the safety of the occupants of buildings.
5. To ensure a reasonable degree of success of either natural or powered systems it would be necessary to take fully into account the location of the common access corridors in relation to the outside walls of the building in conjunction with the strengths and direction of the prevailing winds for that area. Although such data would be available, a complicated calculation is necessary to process it to enable predictions to be made. Only one computer programme for this purpose is currently known to exist and that needs a considerable amount of further validation work before it could be considered suitable for general use.
6. British Standard CP 3: Chapter IV: Part 1: 1971 is currently in the course of revision and will eventually be published as British Standard 5588: Fire Precautions in the Design and Construction of Buildings: Section 1.2: Code of Practice for

Flats and Maisonettes. A draft of this was issued for public comment earlier this year. Following strong representations from users of the existing Code, efforts are being made in the revision to provide, in common access corridors, adequate safety from fire without recourse to permanently open ventilation that has, in some instances, caused so much discomfort and offers opportunity for vandalism in some buildings.

7. In an attempt to overcome these problems, and taking into account the outcome of the research, it is anticipated that the new British Standard, when published, will place more emphasis on keeping smoke from entering the corridor. It is hoped that some arrangements will also be included to give architects and designers flexibility in the way they can achieve smoke control in buildings whilst at the same time avoiding the problems encountered in following guidance for smoke dispersal given in the current Code of Practice.

8. In the meantime, fire authorities may wish to be reminded that the means of escape provisions in the Building Regulations for flats and maisonettes are covered by mandatory rules which call up the existing British Standard Code of Practice CP 3: Chapter IV: Part 1: 1971. Therefore compliance with that Code of Practice as it stands will satisfy the Regulations. Any variation from the Code of Practice will require a relaxation of the Regulations from the local authority.

9. Pending the publication of the revised Code in BS 5588 Section 1.2 fire authorities may wish to consider, when giving advice, the apparent lack of success of smoke dispersal in the context of CP 3: Chapter IV: Part 1: 1971 as evidenced by the research findings outlined above. Fire authorities may also wish to notify developers of the wisdom of including smoke containment arrangements which provide doors that offer the best facilities for the control of smoke. At the present time, doors of substantial construction incorporating adequate flexible edge seals appear to offer the best option for smoke control in the early stages of fire.

10. There are no resource implications arising directly from this part of the Letter.

Home Office
Fire and Emergency Planning Department
FEP/87 17/20/11

December 1987

Telephone number of contact: 01-213 3501
(up to and including 10 January 1988)

01-273 2867
(new telephone number from
11 January 1988)

THE NUCLEUS HOSPITAL DESIGN PACKAGE AND BUILDING SYSTEM

For some time Health Authorities have had recommendations issued to them by the Department of Health and Social Security on Fire Precautions in Nucleus hospital buildings but these have not been readily available to Fire Authorities. The Home Office has therefore with the agreement of DHSS decided that it would be appropriate to issue these recommendations to all Fire Authorities.

Copies of the Nucleus document, 'Nucleus Fire Precautions Recommendations 1979' together with amendments 1-6, an extract from Projects Information Bulletin No. 19, the Nucleus Design booklet, Nucleus Users guide and a covering note from DHSS are attached for the information of Chief Fire Officers. Future publications on Nucleus fire matters will be supplied direct by DHSS.

It is recommended that fire prevention officers should refer to the guidance when responding to requests for advice from health authorities on Nucleus projects. The local fire authority will have already been advised by the HO Fire Inspectorate that they may expect an approach from the project team concerned and advised of the nature of the scheme. Regional Health Authorities will remain responsible for supplying their local fire brigades with Nucleus fire plans relating to specific schemes.

There are no significant additional cost or manpower implications arising from the circulation of this guidance to fire brigades.

File reference: FEP/87 45/51/1

Telephone number of contact: 01 213 7338

NUCLEUS FIRE PRECAUTIONS RECOMMENDATIONS

The Nucleus Fire Precautions Recommendations, first Edition, February 1979 is currently being updated to include:-

- a. Amendments which have been issued in Projects Information Bulletins and other guidance;
- b. Modified fire precaution requirements, not yet promulgated.

In the meantime this copy should be read in conjunction with the following attached amendments:-

1. Extract from Projects Information Bulletin number 5, June 1982 - Nucleus design principles;
2. Extract from Nucleus Projects Information Bulletin number 6, Nucleus design, smoke extract systems;
 - . Nucleus Projects Information Bulletin number 10, fire compartment doors, ventilation grilles and escape requirements from roof voids;
4. Extract from Nucleus Projects Information Bulletin number 11, planning considerations - wards for the elderly and hospital street;
5. Nucleus Projects Information Bulletin number 14 - new design requirements;
6. Extracts from Nucleus Projects Information Bulletin number 16, - revised liaison and agreement procedures;
7. Extract from Nucleus Projects Information Bulletin number 19 - approval procedures.

July 1987

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