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FEP/86 49/90/1
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To: All Chief Officers

1 February 1991

Dear Chief Officer

DEAR CHIEF OFFICER LETTER 1/1991

Items

1. Rate of Fire Development Test in Furniture - CFBAC Report No. 39
2. Portable Fire Extinguisher Trials against 89B (1.89 Diameter) Fires of Leaded and Unleaded Petrols - CFBAC Report No. 38
3. Intruder Alarms
4. Radio System for Alerting Retained Firefighters
5. 999 Emergency Call Service - BT Operator Announcement
6. Firefighters Switches for Luminous Tube Signs
7. Emergency Action Codes and Supplementary Information for Dealing with Incidents involving Dangerous Substances Conveyed in Bulk by Road : Amendments to Hazchem List No. 6
8. The Classification, Packaging and Labelling of Dangerous Substances for Conveyance by Road
9. The Road Vehicles (Construction and Use) (Amendment) (No.4) Regulations 1990

Yours faithfully

SIR REGINALD DOYLE
Her Majesty's Chief Inspector of Fire Services

ITEM 1

DCOL 1/1991

RATE OF FIRE DEVELOPMENT TEST IN FURNITURE - CFBAC REPORT NO.39

1. Evidence suggests that upholstered furniture is a major contributor to deaths and injuries in fires in the United Kingdom. The only British Standards tests available are aimed at determining ignition resistance, but it is clear from the figures that the ignition process is not the only factor responsible for the hazard associated with furniture fires and that the rapidity of fire growth is probably the main contributor to the loss of life and injuries reported.

2. The attached report describes a research project aimed at determining the basic principles upon which a test for the rate of fire development could be established. The work was performed by the Fire Research Station as part of the Home Office Fire Research Programme. The work was also partly funded by the Construction Industry Directorate of the Department of the Environment which has an interest in the conditions that internal linings of buildings are subjected to during fires. Because of the complex technical nature of much of the research only the management summary is being circulated to brigades.

3. For the tests a range of those upholstery composites available in the United Kingdom prior to the introduction of the Furniture and Furnishings (Fire) (Safety) Regulations 1988 were selected and examined using a variety of different methods to ascertain information about their fire behaviour. Data was obtained concerning ignition resistance, rate of fire spread and rate of heat release using reduced scale specimens, full scale mock seats and 'real' production armchairs. A series of tests was also conducted using a bench-scale instrument known as the cone calorimeter.

4. It is acknowledged that many different materials are used in the manufacture of upholstered furniture as fillings, most of which display undesirable fire behaviour. However, for the purposes of this programme of research the most commonly used material - cellular foam, was used. The research has shown that the foams selected exhibited a wide range of ignition resistance and fire growth severity. Very rapid and intense fires were produced by most of the domestic products tested, with slower growing, less intense fires produced by many of those foams intended for non-domestic use. The changes in manufacturing practice resulting from the new regulations eliminated many of the foams chosen at the start of the programme. However, tests conducted on the new polyurethane foams now known simply as Combustion Modified Foams showed that some were only marginally safer in fires than the standard foams, whilst some were considerable safer. Nevertheless, in the range of products tested the measurement of heat release was identified as the best indicator of fire growth and consequent hazard to life.

5. The British Standard Furniture ignitability tests (BS: 5832) provided a limited indication of the fire behaviour of upholstery materials but these were not a reliable indication of fire growth severity even with additional surface flame spread measurements. The research did, however, indicate that materials could be successfully assessed using the cone calorimeter to provide a good prediction of full scale fire growth behaviour from small specimens of fabric/foam combinations. The full scale calorimeter provided detailed evidence of fire growth behaviour from full scale mock armchair specimens and 'real' production armchairs.

6. The data obtained through this research project has greatly improved understanding of the post ignition fire performance of foam-filled furniture. However, before a standard test specification can be written it will be necessary to obtain an extensive database from the fire performance of a much wider range of materials and to this end a further research project, using the cone calorimeter is currently being undertaken.

7. There are no financial or manpower implications for brigades arising from this part of the letter.

FEP/90 17/20/2

Telephone contact number: 071 273 2867

Item 2

DCOL 1/1991

PORTABLE FIRE EXTINGUISHER TRIALS AGAINST 89B (1.89 DIAMETER) FIRES OF LEADED AND UNLEADED PETROLS - CFBAC REPORT NO. 38

1. During 1988 and the early part of 1989 there was a good deal of media speculation, and consequently public concern, about the extinguishing capability of fluoroprotein and AFFF foams when used at small scale fires involving unleaded petrol. Although assurances were provided by the petroleum industry and various Government Departments it was decided to undertake a scientific evaluation of the performance of portable fire extinguishers on fires of various petrol formulations. The work was undertaken as part of the Home Office Fire Research Programme by the Fire Experimental Unit, Moreton-in-Marsh, as part of a wider project to consider foams, tactics and equipment for the fire service.

2. The concern arose from the possibility that unleaded fuels, deprived of lead compounds as octane improvers, would contain high levels of water soluble additives which might break down firefighting foams and significantly reduce their extinguishing capability. As this concern related to the relatively small fire encountered with cars and petrol retailing, the portable fire extinguishers chosen for the tests were the most widely used types on retail petrol forecasts; aqueous film-forming foam (AFFF), fluoroprotein (FP) and film-forming fluoroprotein (FFFP).

3. The report confirms that the additive concentrations permitted under the respective British Standards for unleaded and leaded petrols (BS4040 and BS7070) are identical. Nevertheless, it is recognised that the elimination of lead compounds from petrol inevitably increases the incentive to use additives to maintain octane ratings. The test, therefore centred upon the preparation of special petrol formulations intended to represent 'worst case' examples permitted under British Standards. The fire tests were based on the method described in BS 5423 Class B fuel fires. A more detailed scientific background to the test is provided in the report.

4. The test did not include an assessment of the extinguishing capability of dry chemical powder, halon, or carbon dioxide chemical extinguishers because water miscibility (the potential source of foam breakdown and reduced extinguishing capability) has no effect on such extinguishing media.

5. In the event, the test showed that the foams used suffered no significant loss of fire extinguishing capability when used on unleaded petrol fires. The report therefore concludes that there is no need to change foam fire extinguisher requirements for petrol forecourts or comparable situations.

6. However, the report does suggest that there might be a need for further investigation of the effect that the presence of permitted levels of additives could have on the quality of the foam blanket. This would not be significant at small fires but may have implications for fighting larger scale fires involving both leaded and unleaded formulations. Further research aimed at large scale petrol fires has been incorporated into the same project and the results of this work will be reported to the Chief Officers in due course.

7. It is not anticipated that any manpower or financial implications will arise from this part of the letter.

FEP/89 20/321/1

Telephone Contact Number: 071 273 2411

Item 3

DCOL 1/1991

INTRUDER ALARMS

1. Chief Officers should be aware of the existence of certain types of intruder alarms and the potential hazards to which they give rise. Chief Officers should be aware also of the legal position regarding these alarm systems.

Background

2. A brigade recently attended an incident at a social club where smoke was seen to be coming out of the building and every room was heavily smoke logged. There was, however, no evidence of fire or heat. It was found that the smoke was being emitted by a generator linked to an intruder alarm, which had been activated despite there having been no break-in. Subsequent inquiries have brought to light the following information.

The Alarm Systems

3. The intruder alarm installed at the social club was made by Scantec Commercial. Its makers claim that in the event of an intruder entering, an earpiercing siren will sound and the protected area will fill with grey smoke "blinding" the intruder and making it impossible for him to continue; anyone tampering with the system will cause an immediate alarm condition - even when switched off. The smoke fill rate is claimed to be 50,000 cubic feet per minute with siren output levels in excess of 115 decibels. The generator emits Ultramist fog fluid which is said to be water-based and non-toxic. During inquiries another intruder alarm was reported, which was said to emit a series of very high intensity sounds capable of disorientating an intruder.

The Legal Position

4. The Police Department of the Home Office has been consulted. They in turn have consulted the Crime Prevention Centre, the Department of the Environment, the Department of Trade and Industry and the Lord Chancellor's Department. The legal position is that the use of these types of device may constitute a civil offence under the Occupiers Liability Act 1984 since the smoke or noise generated would result in injury to those in the vicinity of the device. These types of device may also contravene British Standard 4737 on intruder alarms because they are unsafe in that they emit dangerous levels of noise. Additionally, where these devices are connected to a remote signalling installation, they may be in breach also of ACPO's recently introduced (discretionary) unified intruder alarm policy. The police are aware of the Scantec device, which they have reason to believe is no longer in production.

Possible hazards

5. These devices pose potential hazards both to the public and to firefighters. A discharge of smoke (accidental or otherwise) might mislead the public into believing that there was a fire. This could lead to panic in an occupied building such as a social club. In the event of fire brigade personnel operating whilst such a device was activated, communications would be made difficult and there is a possibility that distress warning signals would not be heard. Furthermore, firefighters might be disorientated from prolonged exposure to noise levels.

6. This item is for Chief Officers' information and should be drawn to the attention of Fire Prevention Inspecting Officers. There are no manpower or financial implications.

FEP/90 72/89/1

Telephone Contract Number: 071 273 3942

Item 4

DCOL 1/1991

RADIO SYSTEM FOR ALERTING RETAINED FIREFIGHTERS

At the request of the Joint Committee on Fire Brigade Communications, the Home Office is currently involved in the technical assessment and preparation of a procurement specification for the next generation of alerting systems for retained firefighters. Equipment trails are being arranged and it is hoped that the Home Office will be able to offer a "standing offer" contract, similar to that offered for personal radios. It is unlikely, however, that many brigades will be able to take advantage of a replacement alerter system for two to three years.

2. In the meantime, it is important that Chief Officers are aware of the arrangements for maintaining the present generation of alerter equipment. Chief Officers will be interested to know that the Home Office Directorate of Telecommunications recently advised the Joint Committee on Fire Brigade Communications (JCFBC) that it will be able to maintain the present generation of Multitone alerters and base station transmitters for a further three years ie until the end of 1993.

3. It should be noted, however, that parts for the Multitone alerter are becoming increasingly more expensive and difficult to obtain. Moreover, the Directorate has no stocks of alerters available and this type of unit is no longer manufactured. To ease matters during the period before the replacement programme can be implemented, the Home Office Radio Frequency Communications and Planning Unit looked for alternative equipment which could be used as a stopgap measure, but were unsuccessful.

4. In the circumstances, the Directorate recommends that brigades should plan to replace their existing alerter systems by the end of 1993. The JCFBC fully supports this recommendation.

5. Further details about the replacement alerter system, including costs of equipment, will be issued when the information is available.

6. There are no immediate financial or manpower implications arising from the issue of this guidance, but financial outlay will be required when brigades come to replace their existing equipment. The costs of the new equipment will be supplied when available. A "standing offer" contract arrangement, if secured and supported by brigades, should provide good value for money.

FEP/87 58/59/2

Telephone contact number: 071 273 3583/3842

Item 5

DCOL 1/1991

999 EMERGENCY CALL SERVICE - BT OPERATOR ANNOUNCEMENT

British Telecom has requested that all emergency authorities (EAs) should be advised that there has been an amendment to the announcement from the BT operator when connecting an 999 call to the emergency services.

2. The amendment has been made to enable control room staff to identify from which BT Operator Assistance Centre (OAC) the 999 call is coming from. This information is needed in case any queries arise after completion of the call. In the circumstances, BT's operating procedure has been amended to read as follows:

> "When the EA answers, say: "This is (OAC's name) connecting (Telephone No)." Do not interrupt if the caller begins to speak to the EA but be ready to pass the caller's number at the earliest opportunity. If you have been unable to obtain the number, advise the EA: "Caller's number not known". If you have already obtained or been given a location, pass this to the EA as you connect.
>
> If the call is from an automatic alarm, say: "This is (OAC's name), through to automatic alarm."
>
> "If the call is known to be from a payphone, say: "This is (OAC's name), connecting you to (Telephone No), payphone" and note the docket accordingly."

3. On most occasions, BT feel that the use of a simple name to identify the Operator Centre, eg Orpington or Warrington, will suffice. To ensure that there is no confusion because, for example, EAs themselves may use a similar style of address on internal calls, BT is asking its local managers to derive, in full co-operation with EAs, a mutually agreed alternative.

4. With the implementation of BT's digital BTOSS system which provides automatic Calling Line Identity (CLI), BT shall be increasingly passing the caller's number to control room staff in the <u>all-figure</u> format, eg 0689 12345 rather than Orpington 12345. This is now the case in the major cities. By way of explanation, BT advise that with the integration of many local exchanges into large linked number schemes in recent years, and the subsequent loss of their unique identify, the actual exchange name is not always relevant in identifying the location. Also, the indications are that the all-figure numbering will soon become the norm; as in the case of the Mercury network where exchange names do not exist.

5. In conclusion, BT advise that the announcement of Operator Centre identity is underway and is simply the formalisation of what was already in existence in many areas. The provision of

CLI in national number form will become commonplace when the BTOSS system is handling 999 calls at sites other than those conducting trails.

6. There are no manpower or financial implications arising from the guidance.

FEP/90 59/67/11

Telephone contact number: 071 273 3583/3842

Item 6

DCOL 1/1991

FIREFIGHTERS SWITCHES FROM LUMINOUS TUBE SIGNS

1. Under section 9 of the Local Government (Miscellaneous Provisions) Act 1982 fire authorities can, if they so choose, adopt section 10 of the Act which enables them to require those using luminous tube signs or any other electrically operated equipment designed to work at a voltage exceeding 650 volts to fit a special type of switch in the circuit between the supply to the sign and the transformer, on the side of the lowest voltage ie the mains supply. Such a switch enables a firefighter to render the apparatus electrically harmless in an emergency.

2. Section 47 of the Fire Safety and Safety of Places of Sports Act 1987 will raise the voltage threshold from 650 to 1000 volts AC or 1500 volts DC between conductors or 600 volts AC or 900 volts DC between any Conductor and Earth once the appropriate commencement order is made. It will also enable the Secretary of State to prescribe by order from time to time other suitable voltages "having regard to the current regulations of the Institution of Electrical Engineers". These new voltage thresholds conform with the Institution's current regulations and meet international standards for voltage ranges. Similar provisions are contained in The Electrical Luminous Tube Signs (Scotland) Regulations 1990.

3. A Commencement Order bringing section 47 of the Fire Safety and Safety of Places of Sport Act into effect was made on 3 October 1990. Section 47 came into force on 31 December 1990. A copy of the Commencement Order is attached.

FEP/87 6/190/1

Telephone contact number: 071 273 3342

AMENDMENTS TO HAZCHEM LIST NO. 6 - Oct 1990

S.I.N.	Substance	E.A.C.	A.P.P.	C.E.F.I.C. Tremcard	Hazards		A.D.R. H.I.N.
					Class	Sub Risks	
1120	tert-BUTANOL	3[Y]E		164/30G30	3		33
1120	n-BUTANOL	3[Y]		583/30G35	3		30
1120	sec-BUTANOL	3[Y]		583/30G35	3		30
2214	PHTHALIC ANHYDRIDE *with more than 0.05 per cent maleic anhydride*	2X		83/80G20/ 80G21	8		80
2214	PHTHALIC ANHYDRIDE *with less than 0.05 per cent maleic anhydride carried at over 100 °C*	2W			8		80
2834	PHOSPHOROUS ACID	2R		80G06	8		80
3149	HYDROGEN PEROXIDE AND PEROXYACETIC ACID MIXTURE, *with acid(s), water and not more than 5% peroxyacetic acid, stabilised*	2W			5.1	8	

Item 7

DCOL 1/1991

EMERGENCY ACTION CODES AND SUPPLEMENTARY INFORMATION FOR DEALING WITH INCIDENTS INVOLVING DANGEROUS SUBSTANCES CONVEYED IN BULK BY ROAD : AMENDMENTS TO HAZCHEM LIST NO. 6

In my letter of 3 August 1990 (Dear Chief Officer letter 10/1990, item 3) I explained that a revised list of dangerous substances, including emergency action (Hazchem) codes and supplementary information, had been agreed by the Hazchem Technical Sub-Committee of the Joint Committee on Fire Brigade Operations. A copy of the revised list (Hazchem List No. 6) was enclosed with my letter from each Chief Fire Officer in England and Wales.

2. At a recent meeting, the Hazchem Technical Sub-Committee agreed a number of amendments to Hazchem List No.6. Details are attached at Annex A. I would be grateful if brigades could ensure that copies of Hazchem List No. 6 are amended accordingly.

FEP/90 64/1500/1

Telephone contact number: 071 273 3342 (general)
071 273 4184 (technical)

Item 8

DCOL 1/1991

THE CLASSIFICATION, PACKAGING AND LABELLING OF DANGEROUS SUBSTANCES FOR CONVEYANCE BY ROAD

The Health and Safety Commission (HSC) has produced two revised Codes of Practice on the classification, packaging and labelling of dangerous substances for conveyance by road. These revised Codes of Practice take into account changes made to the Recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods in December 1986.

<u>Revision No.1 to the Approved Code of Practice : "Classification and Labelling of Dangerous Substances for Conveyance by Road in Tankers, Tank Containers and Packages"</u>

2. The Code has been approved by the Health and Safety Commission under Section 16(4) of the Health and Safety at Work etc Act 1974 for the purposes of providing practical guidance with respect to:

a. the provisions of Regulations 6(1), 6(4) and 9(2) of, and Schedules 2 and 7 to the Classification, Packaging and Labelling of Dangerous Substances Regulations 1984 (SI 1984 No 1244) (the 'CPL Regulations');

b. the provisions of Regulations 2(1), 9(a), 14, 15 and 16 of, and Schedules 1 and 3 to the Dangerous Substances (Conveyance by Road in Road Tankers and Tank Containers) Regulations 1981 (SI 1981 No 1059) (the 'Road Tanker Regulations');

c. the provisions of Regulations 2(1), 3(1), 10(2) and 10(3) of, and Schedules 1-3 to the Road Traffic (Carriage of Dangerous Substances in Packages etc) Regulations 1986 (SI 1986 No 1951) (the 'PG Regulations').

3. This Code of Practice gives practical guidance on the classification and labelling of substances dangerous for conveyance by road in packages on the basis of their characteristic properties. It is one of three relating to the CPL Regulations, the other two being:

Packaging and Labelling of Dangerous Substances for Conveyance by Road. (Revision No 2)

Classification and Labelling of Substances Dangerous for Supply. (COP 22)

Copies of the Approved Code of Practice can be purchased from HMSO, price £3.50, ISBN No. 0 11 885518 2.

Revision No. 2 to the Approved Code of Practice "Packaging and Labelling of Dangerous Substances for Conveyance by Road"

4. The Code has been approved by the Health and Safety Commission under Section 16(4) of the Health and Safety at Work etc. Act 1974 for the purpose of giving practical guidance in relation to Regulation 7 of the Classification, Packaging and Labelling of Dangerous Substances Regulations 1984 (the 'CPL Regulations') in so far as the Regulation relates to the packaging of dangerous substances for conveyance by road.

Copies of the Approved Code of Practice can be purchased from HMSO, price £3.50, ISBN No. 0 11 885519 0.

Note: Both Codes of Practice are being further revised to take account of changes made at the meeting of the United Nations Committee of Experts in December 1988.

FEP/86 49/90/1

Telephone contact number: 071 273 3342

Item 9

DCOL 1/1991

THE ROAD VEHICLES (CONSTRUCTION AND USE) (AMENDMENT) (NO.4) REGULATIONS 1990

The above Regulations came into force on 2 November 1990. The principal provisions of the new Regulations are explained below.

Amendments concerning Brakes

2. The principal change of substance to the braking regulations is the introduction of compulsory anti-lock systems for certain heavy goods vehicles and buses in line with Community Directive 88/194/EEC. The new requirement will apply to inter urban and long distance touring coaches over 12 tonnes gross weight, to motor vehicles over 16 tonnes authorised to two trailers over 10 tonnes, which are first used on or after 1 April 1992 and to trailers over 10 tonnes gross weight, which are manufactured on or after 1 October 1991.

Amendments concerning Tyres

3. Regulation 25 which concerns tyre load and speed ratings has been completely redrafted. The principal changes are:

a. From 1 April 1991 tyres fitted to new heavy goods vehicles and buses must comply with ECE Regulation 54;

b. Specific permitted load variations per tyre are set for vehicles with special design and driving characteristics;

c. Dual purpose vehicles are now covered by the regulation.

4. Regulation 27 concerning the condition and maintenance of tyres is amended to take account of Community Directive 89/459 which sets a new minimum in-service tread depth for cars, light vans and their trailers of 1.6mm in the main grooves of the central three quarters of the tread pattern. These new "in use" requirements apply from 1 January 1992. Vehicles first used before 3 January 1933 are exempt, as many vintage vehicles have resilient, not pneumatic tyres.

5. The regulations introduce a new category of "restricted speed vehicle" which will bear a "50" plate and be restricted by Regulation 1000A to 50mph. Operators will be able to fit this plate voluntarily and obtain a load bonus against the load capacity index marked on the tyre.

Amendment concerning public works vehicles

6. The opportunity has been taken to amend the definition of "public works vehicle" in the parent regulations. The new definition takes account of changes in the status of many public bodies and the ability of local authorities to contract out many of their statutory duties.

7. Copies of the Regulations SI No. 1981 (ISBN 0 11 004981 0), can be purchased from HMSO.

FEP/88 47/108/3

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