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14 October 1983

To all Chief Fire Officers

86429

Dear Chief Officer

- A. CLASSIFICATION AND LABELLING OF EXPLOSIVES REGULATIONS 1983
- B. INCIDENTS INVOLVING MILITARY AIRCRAFT : THE MINIATURE DETONATING CORD

A. Classification and Labelling of Explosives Regulations 1983

1. You will wish to know that the above Regulations will come into effect on 1 November 1983. Copies of the new Regulations are available from Her Majesty's Stationery Office (Statutory Instrument 1140 of 1983) at a cost of £3.15 each. Notes for guidance on the operation of the new Regulations will also be available in due course from Her Majesty's Stationery Office in a Health and Safety series booklet (HS(R)17).

2. These Regulations introduce the United Nations (UN) system for classifying and labelling explosives and will replace the system of classification set out in the Explosives Act 1875 and subordinate legislation. The Regulations enable the UN system to be brought into effect progressively over a period of 5 years, during which time, both systems of classification and labelling will be permitted. Military explosives have been classified and labelled using the UN system over the past 5 years and the Regulations will provide a single, comprehensive system which will be applicable to both commercial and military explosives in the future. The law will be consolidated at a later date. The note attached at Annex A to this letter identifies those parts of the Regulations which it is thought will be of most interest to Chief Officers.

B. Incidents involving Military Aircraft : the Miniature Detonating Cord

3. The canopies of certain military aircraft are now fitted with a Miniature Detonating Cord. This device can be exploded to fracture the canopy and allow a pilot to escape, and as it might constitute a hazard to firemen chief officers may wish to be aware of the information set out in Annex B to this letter.

4. Apart from the purchase price of the documents referred to in paragraph 1, there are no direct cost or manpower implications arising from the issue of this letter.

The Fire Service
College



00130995

sincerely



CLASSIFICATION AND LABELLING OF EXPLOSIVES REGULATIONS 1983

1. The Classification and Labelling of Explosives Regulations 1983, which will come into effect on 1 November 1983, specify that with certain exceptions no explosive article or substance may be conveyed, kept or supplied in a packaged or unpackaged form unless it has been classified by the Health and Safety Executive or, in the case of military explosives, by the Ministry of Defence, and complies with specified labelling requirements based on the UN's recommendations. The Health and Safety Executive will be the sole enforcing authority.
2. Of particular note are the labelling requirements set out in Regulation 6 and Schedule 3, for articles and substances or combinations of the two which have been assigned to Explosives, Class 1. Class 1 divisions and compatibility groups which together form the hazard classification codes employed on labels are listed at Annex A to this appendix. Under the UN system all goods of Class 1 may be distinguished by means of a hazard warning label in the form of an orange diamond bearing the digit '1' in the lower corner angle. Examples of the orange diamond label and its variants are at Annex B to the appendix.
3. Packaged goods of Class 1, Divisions 1.1., 1.2 and 1.3 are identified by an orange diamond bearing a pictogram of a bomb burst above the word 'EXPLOSIVE' and an appropriate hazard classification code (comprising the hazard class, division number and compatibility group letter e.g. 1.2E) printed in black. For packaged items in Class 1, Divisions 1.4 and 1.5 the orange diamond has no bomb burst pictogram because by definition the hazard is not significant (1.4) or is not very likely to arise (1.5). Variations of the label will be allowed for items classified 1.4S and for fireworks. Packaged goods assigned to Class 1 will, in addition bear a second 'label', which will often take the form of a stencilled mark, showing a UN Serial number for the contents, the name of the product and the name and address, or monogram, of the manufacturer or importer.
4. Similarly, two labels are required for unpackaged goods assigned to Class 1. However, in these cases the name of the product need not be recorded in the secondary 'label' or stencilled mark.
5. An organic peroxide or any other product with some explosive properties that has been excluded from Class 1 but which, nevertheless, has been designated as presenting a significant hazard from explosion is required under Regulation 7 to bear a UN subsidiary risk label while it is kept or conveyed. The subsidiary risk label comprises the standard orange diamond bearing a bursting bomb pictogram only; there is no hazard classification code or digit '1' which would typify labels used for goods of Class 1.
6. The Regulations anticipate the future development of palletisation of commercial explosives, already in common use for military explosives. The provisions in Regulation 9 require any such unit load that is comprised of items of the same hazard classification code to be arranged so that the labelling of at least one item is visible on each of its vertical faces, except that Regulation 9 also enables labels indicating the classification of the unit load as a whole to be attached to any device, base or straps in which the individual items are assembled. Where the items which comprise the unit load are of varying hazard classifications, the orange diamond labels on the straps etc. will show the classification of the unit load as a whole.

THE DIVISIONS

1 Division	2 Division number
Substances and articles which have a mass explosion hazard.	1.1
Substances and articles which have a projection hazard but not a mass explosion hazard.	1.2
Substances and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard.	1.3
Substances and articles which present no significant hazard.	1.4
Very insensitive substances which have a mass explosion hazard.	1.5

Regulation 2(1)

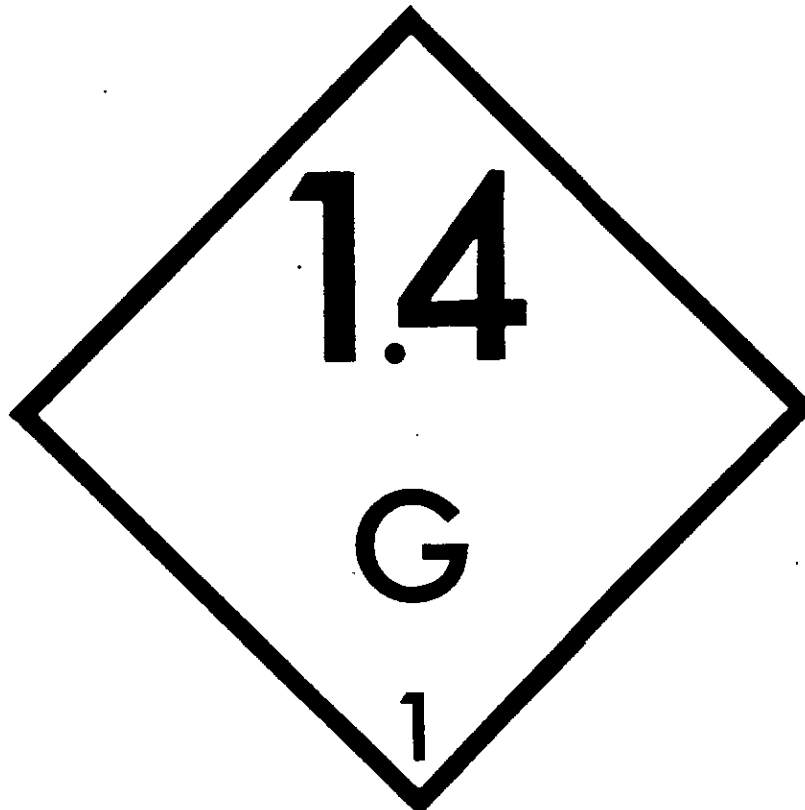
THE COMPATIBILITY GROUPS

1 Compatibility Group	2 Compatibility Group letter
Primary explosive substance.	A
Article containing a primary explosive substance and not containing 2 or more independent safety features.	B
Propellant explosive substance or other deflagrating explosive substance or article containing such explosive substance.	C
Secondary detonating explosive substance or black powder or article containing a secondary detonating explosive substance, in each case without means of initiation and without a propelling charge, or article containing a primary explosive substance and containing 2 or more independent safety features.	D
Article containing a secondary detonating explosive substance, without means of initiation and with a propelling charge (other than a charge containing a flammable or hypergolic liquid).	E

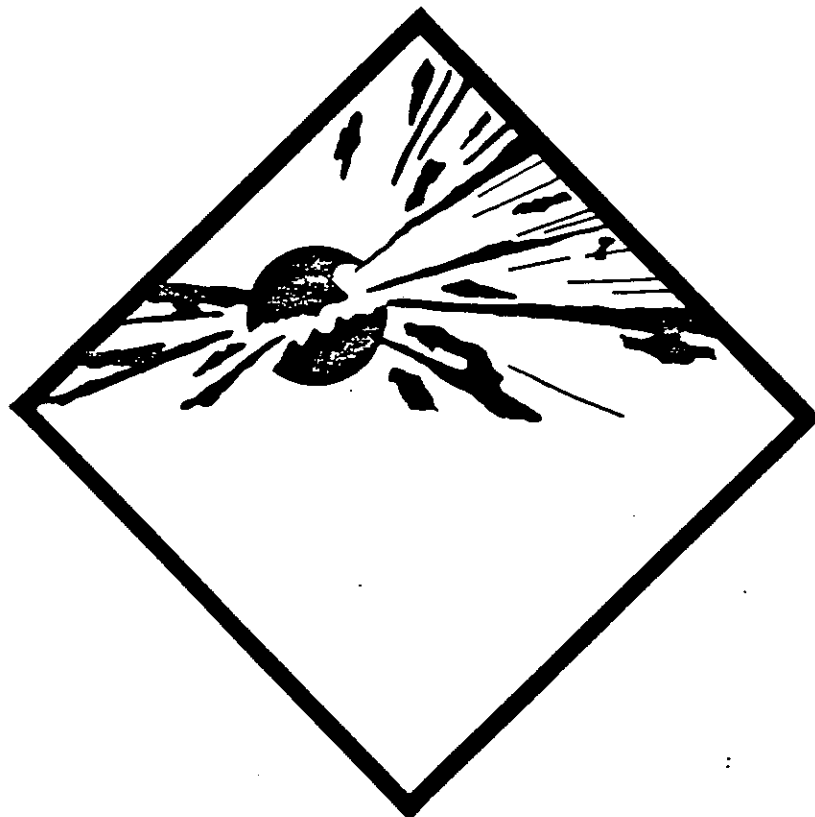
**Label for packaged and unpackaged articles, substances
or combinations in Class 1, Division 1.1, 1.2, 1.3**



**Label for packaged and unpackaged articles, substances
or combinations in Class 1, Division 1.4, 1.5**



**Label for an article, substance or combination
not in Class 1 which is nevertheless designated
as presenting a significant hazard from explosion
(for use while the material is kept or conveyed)**



1 Compatibility Group	2 Compatibility Group letter
Article containing a secondary detonating explosive substance, with means of initiation, and either with a propelling charge (other than a charge containing a flammable or hypergolic liquid) or without a propelling charge.	F
A substance which is an explosive substance because it is designed to produce an effect by heat, light, sound, gas or smoke or a combination of these as a result of non-detonative self-sustaining exothermic chemical reactions or an article containing such a substance or an article containing both a substance which is explosive because it is capable by chemical reaction in itself of producing gas at such a temperature and pressure and at such a speed as could cause damage to surroundings and an illuminating, incendiary, lachrymatory or smoke-producing substance (other than a water-activated article or one containing white phosphorus, phosphide or a flammable liquid or gel).	G
Article containing both an explosive substance and white phosphorus.	H
Article containing both an explosive substance and a flammable liquid or gel.	J
Article containing both an explosive substance and a toxic chemical agent.	K
Explosive substance or explosive article presenting a special risk needing isolation of each type.	L
Substance or article so packed or designed that any hazardous effects arising from accidental functioning are confined within the package unless the package has been degraded by fire, in which case all blast or projection effects are limited to the extent that they do not significantly hinder or prohibit fire-fighting or other emergency response efforts in the immediate vicinity of the package.	S

MINIATURE DETONATING CORD

The Miniature Detonating Cord (MDC) is a thin cord of electronically detonated explosive built into the material from which cockpit canopies are made. The location of an MDC and its external operating lever (which can be found on either side of a cockpit) are shown in the diagram attached. It is currently fitted to the Harrier, Mk 5 Jet Provost, Hawk and Buccaneer.

2. An MDC can be operated from inside or outside a cockpit, either as part of a normal ejection sequence or by using an internal or external operating lever. When operated, the canopy is shattered, with fragments flying mainly upwards and sideways for distances of up to 20 metres. The area in front of the cockpit remains comparatively clear.

3. In the light of the advice issued by the RAF on the operation of this device, the following points need to be emphasised:

- i. When dealing with an aircraft fitted with the MDC, take precautions to protect yourself against the effects of a canopy exploding.
- ii. Approach the cockpit in full view of the aircrew, and respond to any signal that they intend to operate the MDC.
- iii. If the aircrew use the MDC, face away from the cockpit and withdraw as far as possible, preferably in front of the cockpit area, or crouch below the line of the cockpit.

4. If it is necessary to operate the device from outside using the lever shown in the diagram,

- i. Ensure the aircrew are aware that the device is going to be used;
- ii. Remove the cable and move in front of the cockpit taking up the slack;
- iii. Facing away from the cockpit, lower the head and give the cable a sharp pull. (The cable may need to be extended by the use of a line.)

5. The explosive in the cord is unlikely to explode because of the direct effects of heat but, if fire should reach the actual detonator situated within the cockpit, it could subject to flame exposure time and other factors explode if temperatures reach 150°C. Firemen should also be aware that, even if there is no fire, a canopy fitted with an MDC that has become detached from an aircraft could be lethal if moved, and should be left where it is for the attention of armament specialists.