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**ORDER OF SECRETARY OF STATE (No. 9), DATED JUNE 23,  
1919, RELATING TO COMPRESSED ACETYLENE CON-  
TAINED IN A POROUS SUBSTANCE.**

**1919 No. 809**

Whereas by an Order in Council, dated 18th June, 1914,(a) made under Section 104 of the Explosives Act, 1875, it is declared that acetylene when liquid, or when subject to a certain degree of compression, or

38 & 39 Vict.  
c. 17.

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(a) This Order in Council was revoked by S. R. & O. 1914 No. 907 I, p. 566, with saving for Orders of the Secretary of State made thereunder: *see* now S. R. & O. 1937 No. 54, p. 66 above.

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when in admixture with atmospheric air or oxygen gas, shall be deemed to be an explosive within the meaning of the said Act:

And whereas by the said Order in Council it is provided that if it be shown to the satisfaction of the Secretary of State that acetylene declared to be an explosive by the said Order when in admixture with any substance, or in any form or condition, is not possessed of explosive properties, the Secretary of State may by Order exempt such acetylene from being deemed to be an explosive within the meaning of the said Act:

And whereas it has been shown to the satisfaction of the Secretary of State that acetylene when contained in a homogeneous porous substance, with or without acetone or other solvent, and not compressed beyond a certain pressure, is not possessed of explosive properties:

Now, therefore, in exercise of the powers aforesaid, I, one of His Majesty's Principal Secretaries of State, hereby order as follows:—

Acetylene when contained in a homogeneous porous substance, with or without acetone or other solvent, shall not be deemed to be an explosive within the meaning of the said Act subject to the following conditions, and so long only as such conditions are observed, viz.:—

- (1) The porous substance shall be similar in every respect to a sample deposited with His Majesty's Inspectors of Explosives at the Home Office.
- (2) The porous substance shall fill as completely as possible the cylinder into which the acetylene is compressed.
- (3) The porosity of the substance shall not exceed eighty per cent.
- (4) Any acetone or other solvent used shall not be capable of chemical reaction with the acetylene gas or with the porous substance or with the metal of the cylinder, and the quantity of acetone or other solvent used shall be such that when fully charged with acetylene it shall not completely fill the porosity of the porous substance at any temperature likely to be met with in ordinary practice or use.
- (5) A drawing showing the method of construction of every type of cylinder it is proposed to use for the storage of compressed acetylene gas shall be deposited with H.M. Inspectors of Explosives at the Home Office, and no cylinder shall be so used unless it is of a design approved in writing by one of the said Inspectors.

Provided that this shall not be deemed to prohibit the use of existing cylinders for a period of five years from the date of this Order.

- (6) The pressure in the cylinder shall not exceed two hundred and twenty-five pounds to the square inch at a temperature of sixty degrees Fahrenheit.

Provided that no cylinder capable when empty of containing one cubic foot of water or more, which has the ends secured to the body by welding only, and no cylinder in which a porous substance is used without acetone or other solvent, shall be

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charged to a pressure exceeding one hundred and fifty pounds to the square inch at a temperature of sixty degrees Fahrenheit. This condition shall not apply to cylinders used exclusively for marine lighting by a General or Local Lighthouse Authority within the meaning of the Merchant Shipping Act, 1894.

- (7) Every cylinder capable when empty of containing one cubic foot of water or more, in which under this Order the pressure allowed may be two hundred and twenty-five pounds to the square inch, shall be annealed and every cylinder shall be tested by hydraulic pressure to a pressure of not less than four times the pressure to which the cylinder is to be subjected in use, such hydraulic pressure to be maintained for a period of not less than fifteen minutes, and no cylinder shall be used which on the first occasion of its being subjected to this test shall show any permanent stretch.
- (8) The compression of the acetylene shall be carried out only on such premises as shall have been approved in writing by one of His Majesty's Inspectors of Explosives. Such approval may be withdrawn at any time by one of His Majesty's Inspectors of Explosives.
- (9) No firm shall charge with acetylene any cylinder manufactured by any other firm unless it is in possession of the full particulars and previous history of such cylinder, or has otherwise assured itself that the cylinder complies with the requirements of this Order.
- (10) Whenever a cylinder is charged with acetylene it shall be subjected to a thorough visual examination if the history of the cylinder shows that it has not been subjected to such an examination within the previous twelve months and at the same time the valve shall be removed and the condition of the porous substance at the neck of the cylinder ascertained.
- (11) Every cylinder shall have permanently and conspicuously marked upon it or upon a brass plate soldered to it the name of the manufacturer and the words "Acetylene compressed into porous substance exempted by Order of Secretary of State."

And every cylinder shall bear a label giving the date when it was last charged together with the name of the firm by whom it was charged, the address of the last charging station and the maximum pressure allowed in the cylinder.

Every cylinder capable when empty of containing one cubic foot of water or more manufactured after the date of this Order shall have stamped upon it the name or trade mark of the manufacturer and the serial number of the cylinder.

- (12) Each charging firm shall keep a record of every cylinder charged by it. This record shall give the following information:—
  - (a) The tare weight of the cylinder including porous substance and acetone or other solvent, the

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nature of the solvent, and the maximum pressure allowed in the cylinder.

In the case of all cylinders charged:

- (b) The date of each charging of the cylinder.
- (c) The dates upon which solvent has been added.
- (d) The dates upon which the cylinder has been thoroughly examined as provided in Regulation 10, the results of each such examination, and the name of the person carrying out such examination.

The record shall be open to the inspection of His Majesty's Inspectors of Explosives.

- (13) Every facility shall be given to His Majesty's Inspectors of Explosives to inspect the apparatus and methods by which the cylinders are charged.

This Order shall come into force on the 1st August, 1919, from which date the Order of Secretary of State, No. 8, dated 6th August, 1912,(a) shall be deemed to be repealed.

*Edward Shortt.*

Whitehall,  
23rd June, 1919.

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(a) S. R. & O. 1912 (No. 1861) p. 145.