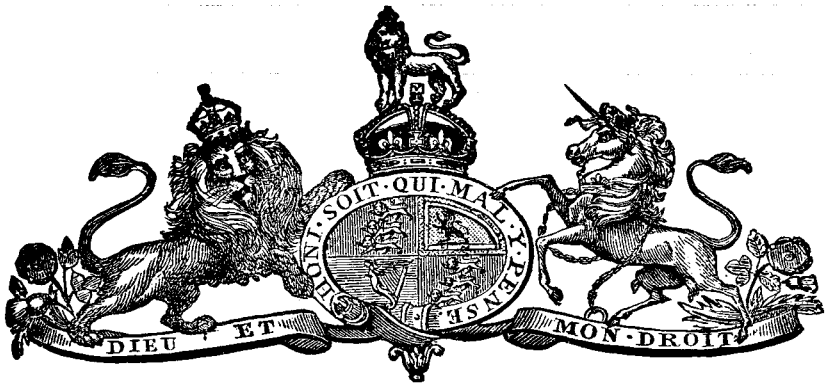
TASMANIA.



1910.

ANNO PRIMO

GEORGII V. REGIS,

No. 21.

A.D. 1910.

AN ACT to regulate the Keeping, Conveying, and Sale of Inflammable Oils and Carbide of Calcium. [11 *November*, 1910.]

BE it enacted by His Excellency the Governor of *Tasmania*, by and with the advice and consent of the Legislative Council and House of Assembly, in Parliament assembled, as follows :—

PART I.

PRELIMINARY AND INTERPRETATION.

Preliminary.

1 This Act may be cited as "The Inflammable Oils Act, 1910." Short title.

2 This Act shall commence on the Thirty-first day of *March*, One thousand nine hundred and eleven. Commencement of Act.

3 This Act is divided into parts, as follow :— Division of Act.

Part I.—Preliminary and Interpretation.
Part II.—Keeping of Inflammable Oil and Carbide of Calcium.

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Part III.—Marking of Packages.
Part IV.—Conveyance of Inflammable Oil.
Part V.—Government Control and Inspection.
Part VI.—Testing.
Part VII.—Legal Proceedings.
Part VIII.—General Provisions.

Repeal. 39 Vict. No. 9.

4 "The Kerosene Storage Act, 1875," is hereby repealed.

Interpretation.

Definitions.

5 In this Act, except where otherwise clearly indicated—

"Boat" means any vessel propelled by oars only:

"Carriage" includes any bicycle, vehicle, or conveyance of whatsoever kind:

"Chief Inspector" means the Chief Inspector of Explosives for the time being appointed or acting under any Act relating to the carriage and storage of explosives:

"Depôt" means any pit, excavation, or enclosed place, whether situate in a building or not, which is constructed in such manner or surrounded by walls of such character that inflammable oil stored therein cannot escape therefrom in the form of liquid, either under the action of fire or otherwise:

"Government Analyst" means the person for the time being holding the office of Government Analyst under appointment by the Governor, or the person so appointed to perform the duties of the Government Analyst for the time being:

"Inland water" means any canal, river, lake, or water which is not tidal water:

"Inspector" means any person for the time being appointed under the provisions of any Act relating to the carriage and storage of explosives, as an inspector of magazines and explosives, or of magazines only, or of explosives only, and includes the Chief Inspector:

"Master" includes every person, except a pilot or Government officer, in command or charge of a ship; and in reference to any boat belonging to a ship means the master of the ship, and in reference to any other boat includes every person having command or charge of such boat:

"Minister" means the responsible Minister of the Crown for the time being administering any Act relating to the carriage and storage of explosives:

"Package" includes every means by which goods may be cased, covered, enclosed, contained, or packed:

"Place" means any part of land or water, and includes anything thereon:

"Prescribed" means prescribed by this Act or by regulations under this Act:

"Protected work" means—

I. A building in which any person dwells, or in which persons are accustomed to assemble for purposes of public concourse, public religious worship, public entertainment or amusement, education or discussion, public offices, stores (bonded or free, or bonded and free combined), and other warehouses; and

II. A building in which persons are employed for the purpose of any trade or business, and which is not situate on premises registered or stores licensed under Part II. of this Act;

III. A dock, wharf (as defined in this section), or timber-yard, and any part of a harbour, port, or river where it is customary for ships to berth, moor, or lie; and

IV. Subject to the provisions of Section Fifteen of this Act, a depôt in which any inflammable oil is kept;

V. Any other place which the Governor by proclamation in the "Gazette" declares to be a protected work:

"Screen wall" means a wall of brick, stone, concrete, solid earth, or other substance efficient for the purpose of preventing the spread of fire from any one place to any other place:

"Ship" includes every description of vessel used in navigation not propelled by oars only:

"This Act" includes any licence, certificate, order, rule, or regulation granted or made in pursuance of this Act:

"Tidal water" means any part of the sea or inlet thereof, or of a river or other water within the ebb and flow of the tides at ordinary spring tides:

"Wharf" includes any quay, landing place, landing stage, jetty, pier, hulk, or other place at which goods are landed, loaded, or unloaded.

Definition of "inflammable oil."

6 "Inflammable oil" means any oil, liquid, or spirit derived wholly or in part from any petroleum, shale, schist, coal, peat, bitumen, or any other similar substance; and any other liquid which the Governor, by proclamation in the "Gazette," declares to be an inflammable oil.

Classification of "inflammable oil."

7 For the purposes of this Act inflammable oils are divided into "petrol" and "kerosene"; and—

I. "Petrol" means any inflammable oil which has a true flashing point of less than Seventy-three degrees Fahrenheit: and

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II. "Kerosene" means any inflammable oil which has a true flashing point of not less than Seventy-three degrees Fahrenheit.

Proclamation under Commonwealth Customs Act, "Commonwealth Gazette," November 19, 1904.

Flashing point.

8 For the purposes of this Act the true flashing point of an inflammable oil shall be that defined in the schedule hereto when the oil is tested in the manner set forth in the said schedule.

PART II

KEEPING OF INFLAMMABLE OIL AND CARBIDE OF CALCIUM.

Petrol.

Stores and premises may be licensed or registered for petrol.

9 Stores or premises may, upon payment of such fees and subject to such conditions as are prescribed, be licensed or registered by the Minister for the keeping of petrol.

Only limited quantities of petrol may be kept in unlicensed and unregistered stores and premises.

10 No person shall keep petrol except in a licensed store or in registered premises: Provided that nothing shall prevent the keeping of petrol—

I. In any quantity not exceeding Fifty gallons: Provided that all the petrol in excess of One gallon is contained in substantial closed metal vessels:

II. On a ship, boat, or carriage, while being conveyed thereon in accordance with this Act:

III. In the fuel tank on a motor carriage or motor-propelled ship.

Penalty: One hundred Pounds.

Registered Premises for Petrol.

Registered premises for petrol.

11 No person shall keep petrol in registered premises exceeding in quantity Two hundred gallons.

Penalty: One hundred Pounds.

Rules as to registered premises.

12 Every person keeping petrol in registered premises, and every person in or about such premises, shall comply with the following rules:—

I. All petrol kept in the premises, except so much as is withdrawn for immediate use, shall be kept in a depôt exclusively appropriated to the purpose, and thoroughly ventilated:

II. The depôt shall not be situated within a building wherein persons are accustomed to assemble for the purposes of public concourse, public religious worship, public entertainment or amusement, education or discussion, nor

shall the depôt be within an inhabited building, unless the depôt is completely surrounded by a screen wall:

III. No artificial light shall be brought within Twenty feet of any place where any vessel containing petrol is being kept, except a light of such construction, position, or character as not to be liable to ignite any inflammable vapour arising from such petrol, unless such petrol is separated from such artificial light by a screen wall:

IV. There shall be no fire, forge, furnace, explosive, highly inflammable substance or other source of danger within Fifty feet of the depôt, unless separated therefrom by a screen wall:

V. All the petrol shall be kept in closed vessels of metal or other prescribed material; every such vessel shall be so substantially constructed and maintained that no leakage whatever of liquid or vapour can take place therefrom:

VI. Every vessel containing petrol shall be clearly marked or labelled, as provided in Part III. of this Act:

VII. All due precautions (whether prescribed or not) shall be taken for the prevention of accidents by fire or explosion, and for the prevention of unauthorised persons having access to the petrol kept on the premises; and no person shall do any act whatever which tends to cause fire or explosion. Explosives Regulations.

Penalty: One hundred Pounds.

13 Whenever any of the conditions contained in Section Twelve are not complied with, or in any case where the Minister thinks fit, the registration of premises may be cancelled, and such premises shall thereupon be deemed to be unregistered. Registration may be cancelled.

Licensed Stores for Petrol.

14 Save as hereinbefore provided, no person shall keep petrol except in a licensed store. Licensed stores.

Penalty: One hundred Pounds.

15 No store shall be licensed unless the following conditions are complied with:— Conditions as to licensing stores.

I. The store shall include one or more depôts as defined by this Act exclusively appropriated to the keeping of petrol and such other oil and such goods as are specified in the licence; and all buildings and places adjoining each other and occupied together shall be deemed to be the same store, and shall be included in one licence:

II. Where the store is situate in a city or town, every depôt therein shall have an effective covering roof of metal, sand, slate, or other uninflammable material, unless any such depôt is within another building, and that building has a roof or roofs externally uninflammable:

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III. Every depôt shall be so situated as not to be within Fifty feet of any fire, forge, furnace, explosive, highly inflammable substance, or other source of danger, unless there is a screen wall between such fire, forge, furnace, explosive substance, or source of danger, and every place where petrol is to be stored:

IV. Every depôt shall be separated as prescribed from all protected works:

V. Every depôt shall be in all other respects situated and constructed as prescribed.

Licence may be forfeited.

16 Whenever any of the conditions contained in Section Fifteen are not complied with, or in any case where the Minister thinks fit, the licence may be forfeited, and the store shall thereupon be deemed to be unlicensed.

Rules as to licensed stores

17 Every person keeping petrol in a licensed store, and every person in or about the same, shall comply with the following rules:—

I. All petrol kept in the store, except so much as is withdrawn for immediate use, shall be kept in the depôt appropriated for the purpose, and the petrol shall be kept in substantial closed vessels of metal or other prescribed material so constructed and secured as to prevent any oil from escaping therefrom in the form of liquid, except such as may be due to unavoidable leakage, provided such leakage is remedied without delay:

II. Except as otherwise provided in this Act, the depôt shall be used exclusively for the keeping of petrol and the packages in which the petrol is contained:

III. No person under the age of Fourteen years shall be employed inside any depôt or licensed store:

IV. No explosives, nor anything liable to spontaneous ignition or combustion, and no fire or light, except an artificial light of the construction and character prescribed, shall be placed, brought, or allowed to remain within Fifty feet of any petrol within the depôt, unless such petrol is separated from such explosive, thing, fire, or light by a screen wall:

V. No quantity of petrol in excess of that specified in the licence shall be kept in the store:

VI. No person shall smoke in any part of the store or within dangerous proximity of a depôt, and no person shall bring any matches into any depôt or licensed store:

VII. In close proximity to every store there shall be kept a sufficient quantity of sand or other prescribed material so distributed as to be available for throwing on any petrol which may be spilled or ignited, and a sufficient number of shovels must also be provided and kept ready and immediately available for use:

VIII. All reasonable precautions, whether prescribed or not, shall be taken for the prevention of accidents by fire or explosion, and for the prevention of unauthorised persons having access to the petrol kept in the store, and against every act whatever which tends to cause fire or explosion and is not reasonably necessary:

IX. No person shall do or omit any act or thing whereby any licence may be forfeited.

Penalty: One hundred Pounds.

Carbide of Calcium and Kerosene.

18 Premises may, upon payment of such fees and subject to such conditions as are prescribed, be licensed and registered by the Minister for the keeping of carbide of calcium or kerosene.

Premises may be registered for keeping carbide of calcium and kerosene.

19 No person shall keep carbide of calcium or kerosene except in registered premises, and in accordance with the regulations: Provided that nothing shall prevent the keeping in accordance with the regulations of—

I. Carbide of calcium, if the quantity kept does not at any time exceed Two hundredweight:

II. Kerosene, if the quantity kept does not at any time exceed Two hundred gallons—

and the same is contained in substantial closed and waterproof metal vessels.

Penalty: One hundred Pounds.

Two hundredweight of carbide of calcium or Two hundred gallons of kerosene may be kept on unregistered premises in certain cases.

PART III.

MARKING OF PACKAGES.

20 No persons shall keep, convey, sell, or expose for sale, petrol unless the outermost package containing the same is clearly marked in conspicuous letters "Highly Inflammable," together with the word "Petrol," or with the trade name under which the oil is sold.

Penalty: One hundred Pounds.

Package containing petrol to be marked.

21 No person shall keep, convey, sell, or expose for sale any kerosene exceeding Five gallons in quantity, unless the outermost package containing the same is clearly marked in conspicuous letters "Kerosene" or the trade name under which the oil is sold.

Penalty: One hundred Pounds.

Packages containing kerosene to be marked.

22 No person shall keep, convey, sell, or expose for sale any carbide of calcium in any quantity unless the vessel containing the same is clearly marked in conspicuous letters "Carbide of Calcium" or "Calcium Carbide," or with such other words as the Chief Inspector considers will properly indicate the contents.

Penalty: Fifty Pounds.

Carbide of calcium not to be kept, &c., unless vessel containing same indicates contents.

PART IV.

CONVEYANCE OF INFLAMMABLE OIL.

Rules as to conveying, loading, and unloading inflammable oil.

23 Every person conveying, loading, or unloading inflammable oil, or assisting in any of such operations, and every employer of any person in any of such operations, shall comply with the following rules:—

I. The oil shall be contained in tanks or other vessels of metal or other prescribed material from which the oil cannot escape in the form of liquid, and so substantially constructed as not to be liable, except under circumstances of gross negligence or extraordinary accident, to be broken or to become defective or insecure in course of conveyance:

II. He shall take all due precautions, whether prescribed or not, to prevent any of the oil from escaping or being discharged into any part of a house or building, or of the curtilage thereof, or into any sewer or drain, or into any inland or tidal water:

III. He shall take all due precautions, whether prescribed or not, for the prevention of accidents by fire or explosion, and for preventing unauthorised persons having access to the oil, and shall abstain from any act whatever which tends to cause fire or explosion and is not reasonably necessary for the purposes of the conveyance, loading, or unloading of the oil or of any other article carried therewith, and for preventing any other persons from committing any such act; and any such other person who, after being warned, commits any such act shall be deemed to commit a breach of these rules:

IV. The work of loading or unloading the oil on or from any ship or boat, where the oil is contained in tanks, shall not be carried on between sunset and sunrise without the permission of the harbourmaster in writing first had and obtained: Provided that, as regards any ship or boat used in navigating the River *Derwent* or the River *Tamar*, such permission may be granted for any specified occasion or occasions, or as a general permission covering any period not exceeding Twelve months.

Penalty: One hundred Pounds.

Notice.

24 No master of any ship or boat shall convey, load, or unload any inflammable oil of a greater quantity than prescribed, unless such notice as may be prescribed is given to the harbourmaster, or if there is no harbourmaster, to an inspector by the master or the owner of the ship or boat, or by the agent of the master or owner.

Penalty: One hundred Pounds.

PART V.

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GOVERNMENT CONTROL AND INSPECTION.

Powers of inspector.

25 An inspector may—

I. At any time enter, inspect, and examine any place where he believes inflammable oil or carbide of calcium may be found:

II. Make any general or particular inquiries as to the observance of this Act:

III. Take without payment such samples of any substance which he believes to be inflammable oil as are necessary for the examination and testing thereof:

IV. Seize, detain, and remove any inflammable oil, or carbide of calcium, and any package, carriage, ship, or boat in which the same is contained, if he has reasonable cause to believe that there has been a contravention of this Act in respect of such oil or carbide of calcium:

V. Where he believes it necessary in the public interest, with the consent of the Minister, destroy or render harmless any inflammable oil or carbide of calcium: Provided that in cases of imminent danger he may so act without such consent.

Inspector to be assisted.

26 Every person on or about the place inspected shall—

I. Facilitate the entry, inspection, and examination by the inspector:

II. Answer all enquiries put as to the observance of this Act:

III. Facilitate the taking of samples, seizure, detention, and removal of any inflammable oil or carbide of calcium, packages, carriage, ship, or boat, and the destruction and rendering harmless of any inflammable oil or carbide of calcium.

Penalty: Not exceeding One hundred Pounds.

Protection of inspector.

27 No inspector shall be liable, except in respect of any wilful neglect or default, to any legal proceedings for anything done in pursuance of this Act.

PART VI.

TESTING.

Standard model apparatus for testing.

28—(1.) A standard model of the apparatus for testing inflammable oil prescribed by this Act shall be deposited with and kept in the office of the Government Analyst.

(2.) The Governor may, by notice in the "Gazette," declare that any new model shall be the standard model, and that any then existing standard model shall cease to be the standard model,

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Verification with standard model.

29 Apparatus constructed in accordance with this Act may from time to time be submitted to the Government Analyst for the purpose of being compared with the standard model and verified.

Stamping of apparatus.

30 The Government Analyst may, on receipt of the prescribed fees and subject to the prescribed conditions—

I. Stamp such apparatus, if found to be accurate, with a mark, date, and number:

II. Stamp such apparatus, if found to be inaccurate, with a statement showing the error in such apparatus with a mark, date, and number.

Tests by unverified apparatus to be deemed inaccurate.

31 Any test made by an apparatus shall be deemed inaccurate unless such apparatus has been compared with the standard model, verified by the Government Analyst, and stamped as aforesaid, within Five years from the date of such test being made.

PART VII.

LEGAL PROCEEDINGS.

Penalties recoverable summarily. 19 Vict. No. 8.

32 All informations for offences against the provisions of this Act, and all penalties, forfeitures, costs, sums of money, and expenses under the provisions of this Act, shall be prosecuted, heard, determined, and recovered in a summary way by and before a police magistrate or any Two or more justices of the peace under and in the mode prescribed by "The Magistrates Summary Procedure Act," or any Act for the time being in force relating to the duties of justices of the peace or to summary proceedings. Such magistrate or justices may make any order as to costs which he or they think fit, and may, in addition to the penalty, order the destruction or forfeiture of the inflammable oil or carbide of calcium, and the packages containing the same, or either of them.

Appeal. 19 Vict. No. 10.

33 Any person who thinks himself aggrieved by any conviction or any penalty imposed under the authority of this Act may appeal against the same in the manner provided by "The Appeals Regulation Act."

Averments which need not be proved.

34 In any prosecution under this Act any allegation or averment in any complaint, information, or proceedings—

I. That a person therein named is an inspector under this Act, or the Government Analyst:

II. That the store therein mentioned is licensed or is not licensed, as the case may be:

III. That the premises therein mentioned are registered or are not registered, as the case may be—

shall be deemed to be proved in the absence of proof to the contrary.

Analyst's certificate to be evidence.

35 In any proceedings under this Act with respect to any article analysed or tested in pursuance of this Act the production of the certificate of the Government Analyst shall be evidence of the facts therein stated unless the defendant or person charged gives notice in writing to the plaintiff or prosecutor at least Twenty-four hours before the date of return of the summons or hearing that he requires the Government Analyst to be called to give evidence.

"Gazette" *primâ facie* evidence.

36 The production of the "Gazette" containing any proclamation, notice, rule, or regulation appearing or purporting to have been issued or made under this Act, or the production of any document certified by the Chief Inspector to be a true copy of or extract from any such proclamation, notice, rule, or regulation, issued or made under this Act, shall be *primâ facie* evidence of the issue or making of such proclamation, notice, rule, or regulation, and that the same is in force.

Notices, &c., may be sent by post.

37 All notices, certificates, and documents, including applications for licences, directed by or required for the purposes of this Act may be sent by post or otherwise, and if sent by post shall be deemed to have been received at the last moment of the day on which the same ought to have been received in the ordinary course of post.

Saving of remedies at common law.

38 —(1.) This Act shall not, save as is herein expressly provided, exempt any person from any action or suit in respect of any nuisance, tort, or otherwise which might but for the provisions of this Act have been brought against him.

(2.) This Act shall not exempt any person from any indictment or other proceeding for a nuisance or for an offence which is indictable at common law or under any Act other than this Act, so, however, that no person be punished Twice for the same offence.

(3.) Where proceedings are taken before any court against a person in respect of any offence under this Act which is also an offence indictable at common law or by some Act other than this Act, the court may direct that, instead of those proceedings being continued, proceedings shall be taken for indicting the person at common law or under such other Act.

PART VIII.

GENERAL PROVISIONS.

Penalties and forfeitures are cumulative.

39 All penalties shall be in addition to any forfeiture.

Disposal of forfeited property.

40 All forfeited property shall be disposed of as the Minister directs or as prescribed.

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Application of penalty.

41 All penalties recovered shall be applied as the Minister directs.

Recovery of penalty in case of ship.

42 Where the owner or master of a ship or boat is adjudged to pay a penalty for an offence committed with or in relation to the ship or boat the court may, in addition to any other power they have for the purpose of compelling payment of the penalty, direct that the same be levied by arrest and sale of the ship or boat and her tackle.

Forging stamp.

43 If any person forges or counterfeits any stamp or mark required by this Act to be placed on apparatus for testing inflammable oil, or alters any such stamp or mark placed on any such apparatus, he shall be guilty of felony, and shall be liable on conviction to imprisonment with or without hard labour for a term ot exceeding Five years.

Proclamations.

44 The Governor may by proclamation declare—

I. Any liquid to be "inflammable oil:"

II. Any place to be a "protected work."

Saving as to Government departments.

45 This Act shall not apply to the conveyance of inflammable oil or carbide of calcium under the control of the Minister or of any Government department: Provided that any person committing any act with respect to any such oil or carbide of calcium tending to cause fire or explosion shall be liable to the like penalty as if the store or premises in which such oil or carbide is kept were licensed or registered, or as if the oil or carbide were conveyed under the provisions of this Act.

Regulations.

46 The Governor may from time to time make, alter, or repeal such regulations (not being inconsistent with the provisions of this Act) as may be necessary or convenient for carrying into effect the provisions of this Act, and in particular, but without diminishing the generality of this provision, for—

I. Prescribing the form and manner of applying for and granting licences and registrations, renewals, transfers, revocations, alterations, and amendments thereto, and fees to be paid: Provided that the fee for each registration shall not exceed Five Shillings, and for each licence shall not exceed Two Pounds:

II. Prescribing the situation of licensed stores and depôts, and of screen walls, and regulating their construction and fitting up:

III. Prescribing the maximum quantity of inflammable oil to be kept in depôts according to their construction and situation and according to the description of inflammable oil kept therein:

IV. Prescribing the construction and character of artificial lights which may be taken into a depôt, or into any building or place in which carbide of calcium is kept:

v. Regulating the keeping, storing, removing, and conveying and the opening and closing of packages of inflammable oil in registered premises, licensed stores, and depôts:

vi. Determining the notice to be given by the master of any ship or boat of intention to convey, load, or unload inflammable oil:

vii. Determining the quantities of inflammable oils which may be conveyed, loaded, or unloaded without giving such notice:

viii. Regulating the navigation of and places for mooring ships and boats conveying, loading, or unloading inflammable oil:

ix. Regulating the description, construction, marking, ventilation, lighting, and general fitting up of ships, boats, and carriages to be used for the conveyance of inflammable oil:

x. Regulating the mode of stowing and keeping inflammable oil during transit, and of giving notice by brands, labels, or otherwise of the nature and destination of any package of inflammable oil:

xi. Regulating the hawking of inflammable oil:

xii. Regulating the use of fires and lights on or near any ships, boats or carriages loading or unloading inflammable oil, or in which inflammable oil is being or has been recently conveyed, and prohibiting the use of such fires or lights thereon or near thereto as may be dangerous:

xiii. Regulating the placing, removal, and storage of inflammable oil on or from any wharf and any place within Two hundred yards of any wharf:

xiv. Regulating the conveyance, loading, and unloading of inflammable oil:

xv. Altering or adding to the schedule to this Act prescribing the manner of testing inflammable oil and the construction of test apparatus: Provided that the standard model of any apparatus made in pursuance of such regulations deposited with the Government Analyst shall be so constructed as to give flash points corresponding to those given by the apparatus prescribed in the schedule:

xvi. Prescribing fees to be paid for testing inflammable oil, for testing, stamping, and marking apparatus, and for any other work done for the purpose of carrying out any of the provisions of this Act:

xvii. As to any matter in connection with which the expression "prescribed" is used in this Act, or in respect to any

purpose for which regulations are contemplated by this Act:

XVIII. Prescribing penalties not exceeding Fifty Pounds for any one offence for any contravention of any regulation.

Testing validity of regulations.

47—(1.) Any person desiring to dispute the validity of a regulation may apply to the Supreme Court, upon affidavit, for a rule calling upon the Chief Inspector to show cause why such regulation should not be quashed, either wholly or in part, for the illegality thereof.

(2.) The said court may make absolute or discharge the said rule, with or without costs.

(3.) All regulations, unless and until so quashed, shall have the same effect as if enacted in this Act.

(4.) No regulation shall be challenged or disputed in any other manner.

SCHEDULE.

N.B.—In this schedule the expression "oil" means any liquid to be tested for the purpose of ascertaining its character as inflammable oil. Degrees of temperature are according to Fahrenheit's thermometer.

I.—Nature of the Test Apparatus.

The apparatus consists of the following parts:—

1. An oil cup.
2. A cover, with slide, test lamp for oil, or test-flame arrangement for use with gas, and clockwork arrangement for opening and closing the holes in the cover, and for dipping the test flame.
3. A water bath or heating vessel.
4. A tripod (with jacket), and spirit lamp or gas arrangement for heating the water bath.
5. A round bulb thermometer for testing the temperature of the oil, with scale ranging from 55° Fahrenheit to 160° Fahrenheit.
6. A long bulb thermometer for testing the temperature of the water, with scale ranging from 90° Fahrenheit to 220° Fahrenheit.
7. A mercurial or aneroid barometer.

The oil cup is a cylindrical flat-bottomed vessel, 2 inches in diameter, $2\frac{3}{10}$ inches in height (internal), made of gunmetal or brass (17 B.W.G.), and tinned or silvered inside. It is provided with a projecting rim, $\frac{5}{10}$ inch wide, $\frac{3}{8}$ inch from the top and $1\frac{7}{8}$ inch from the bottom of the cup, on which it rests when inserted in the water bath. A guage is fixed on the inside of the cup to regulate the height to which it is to be filled with the sample under examination. The distance of the point from the bottom of the cup is $1\frac{1}{2}$ inch. The cup is provided with a close-fitting overlapping cover made of brass (22 B.W.G.), which carries the thermometer, the test lamp, or test-flame arrangement, and the adjuncts thereto. The test lamp, which has a spout, the mouth of which is $\frac{1}{16}$ inch in diameter, or test-flame arrangement, is suspended upon two supports by means of trunnions, which allow it to be easily inclined to a particular angle and restored to its original position. The socket in the cover, which is to hold a round bulb thermometer for indicating the temperature of the oil during the testing operation, is so adjusted that the bulb of the latter is always inserted to distance of $1\frac{1}{2}$ inch below the centre of the lid.

The cover is provided with three holes—one in the centre (0·2 square inch) and two smaller ones (each 0·06 square inch) close to the sides. These are closed and opened by means of a pivoted slide. When the slide is moved so as to uncover the holes, the suspended lamp, or test-flame arrangement, is caught by a projection fixed on the slide, and tilted in such a way as to bring the end of the spout or test flame just below the surface of the lid. As the lid moves back so as to cover the holes the lamp returns to its original position. Upon the cover, in front of and in a line with the nozzle of the lamp, is fixed a white bead, the diameter of which represents the size of the test flame to be used.

The water bath or heating vessel consists of two flat-bottomed copper cylinders (24 B.W.G.)—an inner one of 3 inches diameter and $2\frac{1}{2}$ inches height, and an outer one of $5\frac{1}{2}$ inches diameter and $5\frac{3}{4}$ inches height; they are soldered to a circular copper plate (20 B.W.G.) perforated in the centre, which forms the top of the bath, in such a manner as to enclose the space between the two cylinders, but leaving access to the inner cylinder. The top of the bath projects both outwards and inwards about $\frac{3}{8}$ inch, that is, its diameter is about $\frac{6}{8}$ inch greater than the body of the bath, while the diameter of the circular opening in the centre is about the same amount less than that of the inner copper cylinder. To the inner projection of the top is fastened, by six small screws, a flat ring of ebonite, the screws being sunk below the surface of the ebonite to avoid metallic contact between the bath and the oil cup. The exact distance between the sides and bottom of the bath and the oil cup is $\frac{1}{2}$-inch. The bath is therefore so constructed that when the oil cup is placed in position an air space or air chamber intervenes between the two; consequently, in applying the test to oils flashing below 115° Fahrenheit the heat is transmitted gradually to the oil from the hot water through the air space. The water bath is fitted with a socket, set at a right angle, for receiving a long bulb thermometer, to indicate the temperature of the water. It is also provided with a funnel, an overflow pipe, and two handles.

The water bath rests upon a tripod stand, which is fitted with a copper cylinder or jacket (24 B.W.G.) $6\frac{1}{2}$ inches diameter, so that the bath is surrounded by an enclosed air space, which retains and regulates the heat. One of the legs of the stand serves as a support for a spirit lamp, which is attached to it by a small swing bracket. The distance of the wickholder from the bottom of the bath is 1 inch. The clockwork arrangement by which, during the operation of testing, the slide is withdrawn and the test flame dipped into the cup and raised again as the slide is replaced is provided with a ratchet key for setting it in action for each test, and with a trigger for starting it each time that the test flame is applied. From the beginning to the end of the movement of the slide the time taken is to be exactly three seconds.

II.—Directions for Preparing and Using the Test Apparatus.

1. *Preparing the Water Bath.*

The water bath is filled by pouring water into the funnel until it begins to flow out at the overflow pipe. The temperature of the water at the commencement of each test, as indicated by the long bulb thermometer, is to be as follows:—

(*a*) 130° Fahrenheit when a flashing point at or about 73° Fahrenheit is to be observed:

(*b*) 160° Fahrenheit when a flashing point at or about 100° Fahrenheit is to be observed:

(*c*) 180° Fahrenheit when a flashing point at or about 150° Fahrenheit is to be observed.

This is attained in the first instance by mixing hot and cold water, either in the bath or in a vessel from which the bath is filled, until the thermometer which is provided for testing the temperature of the water gives the proper indication, or the water is heated in the bath by means of a spirit lamp or gas arrangement until the required temperature is indicated.

2. *Preparing the Test Lamp.*

(*a*) The test lamp is fitted with a piece of cylindrical wick of such thickness that it fills the wickholder, but may be readily moved to and fro for the purpose of adjusting the size of the flame. In the body of the lamp, upon the wick which is coiled within it, is placed a small tuft of cotton wool moistened with petroleum, any oil not absorbed by the wool being removed. When the lamp has been lighted the wick is adjusted by means of a pair of forceps or a pin until the flame is of the size of the bead fixed on the cover of the oil cup.

Should a particular test occupy so long a time that the flame begins to get smaller through the supply of the oil in the lamp becoming exhausted, three or four drops of petroleum are allowed to fall upon the tuft of wool in the lamp from a dropping-bottle or pipette provided for the purpose. This can be safely done without interrupting the test.

(*b*) When using gas for testing, the jet is to be lighted and then adjusted by means of the tap controlled by means of a screw pinch cock or fine tap until the flame is the size of the bead fixed on the cover of the oil cup.

III.—Filling the Oil Cup.

Before the oil cup is filled the lid is to be made ready by being placed upon the cup, *i.e.*, the round bulb thermometer is to be inserted into the socket, so that the projecting rim of the collar with which it is fitted touches the edge of the socket, and the test lamp is to be placed in position. The oil cup is to be cooled when necessary to a temperature not exceeding—

(*a*) 60° Fahrenheit, when a flashing point at or about 73° Fahrenheit is being observed:

(*b*) 85° Fahrenheit, when a flashing point at or about 100° Fahrenheit is being observed:

(*c*) 135° Fahrenheit, when a flashing point at or about 150° Fahrenheit is being observed—

by placing it bottom downwards in water at a suitable temperature. The oil cup is now to be rapidly wiped dry, placed on a level surface in a good light, and the oil to be tested is poured in without splashing until its surface is level with the point of the gauge which is fitted in the cup. The lid is then put on the cup at once and pressed down so that its edge rests on the rim of the cup.

IV.—Application of the Test.

1. The water bath, with its thermometer in position, is placed in some locality where it is not exposed to currents of air, and where the light is sufficiently subdued to admit of the size of the entire test flame being compared with that of the bead on the cover. The cup is carefully lifted, without shaking it, and placed in the bath, the test lamp is lighted, and the clockwork wound up by turning the key. The thermometer in the oil cup is now watched, and the clockwork is set in motion by pressing the trigger, when the temperature has reached—

(*a*) 63° Fahrenheit, when a flashing point at or about 73° Fahrenheit is being observed:

(*b*) 90° Fahrenheit, when a flashing point at or about 100° Fahrenheit is being observed:

(*c*) 140° Fahrenheit, when a flashing point at or about 150° Fahrenheit is being observed.

If no flash takes place the clockwork is at once rewound and the trigger pressed at the next higher degree, and so on at every degree rise of temperature until the flash occurs.

2. When a flashing point at or above 115° Fahrenheit is being observed the air chamber is to be filled to a depth of 1½ in. with cold water before the oil cup containing the oil to be tested is placed in position.

3. The temperature at which a flash occurs, if not within 8° of the temperature at which the testing was commenced, is the observed flashing point of the oil, and by correction of the observed flashing point for atmospheric pressure as hereinafter described, the true flashing point is obtained.

4. If, however, the flash takes place at any temperature within 8° of the temperature at which the testing was commenced, the test is to be rejected, and the whole operation of testing is to be repeated with a fresh portion of the sample, the testing, however, to begin at 10° lower than the temperature at which the flash has been previously obtained. If necessary, this procedure shall be repeated with fresh portions of oil until a flash has been obtained at a temperature not within 8° of the temperature at which the testing was commenced.

5. The temperature at which this lastmentioned flash occurs is the observed flashing point of the oil, and by correction of the observed flashing point for atmospheric pressure as hereinafter described, the true flashing point is obtained.

6. In repeating a test a fresh sample of oil must always be used, the tested sample being thrown away, and the cup must be wiped dry from any adhering oil, and cooled, as already described, before receiving the fresh sample.

7. If in any case no flash has occurred when a temperature has been reached which is not within 8° of the temperature at which the testing was commenced, and which, after correction for atmospheric pressure, is not less than 100° Fahrenheit, and the tests are not required to be continued, the oil shall be deemed to have a true flashing point of not less than 73° Fahrenheit.

8. If no flash has occurred when a temperature has been reached which is not within 8° of the temperature at which the testing was commenced, and which, after correction for atmospheric pressure, is not less than 100° Fahrenheit, and the tests are not required to be continued, the oil shall be deemed to have a true flashing point of not less than 100° Fahrenheit.

9. In the same manner if no flash has occurred when a temperature has been reached which is not within 8° of the temperature at which the testing was commenced, and which, after correction for atmospheric pressure, is not less than 150° Fahrenheit, and the tests are not required to be continued, the oil shall be deemed to have a true flashing point of not less than 150° Fahrenheit.

V.—Correction for Atmospheric Pressure.

As the flashing point of an oil is influenced by changes in atmospheric pressure to an average of 1·6° for every inch of the barometer, a correction of the observed flashing point is necessary whenever the barometer does not stand at 30 inches. This correction is to be made in the following manner:—

If the barometer stands at *less* than 30 inches (the normal height of the barometer) *add* to the observed flashing point 1·6 times the difference (measured in inches) between the actual and normal barometer. If the barometer stands *above* 30 inches, *deduct* from the observed flashing point 1·6 times the difference between the actual and normal barometer.

The nearest whole number to the result of this correction is to be taken as the corrected flashing point, and if the result is exactly midway between the two whole numbers the higher whole number is to be taken.

For example: Suppose an oil has an observed flashing point of 72, the barometer being 27·1 inches, then the difference between 30·0 inches and 27·1 inches is 2·9 inches. This result multiplied by 1·6 is 4·64, which has to be *added* to 72, making 76·64. The nearest whole number to this is 77°, which is to be taken as the corrected flashing point, and if the testing had been commenced at or below 64° the true flashing point is 77° Fahrenheit.

Again: Suppose the observed flashing point of an oil to be 96° and the testing had been commenced at 87° and the barometer indicated 30·6 inches. The true flashing point of the oil is the nearest whole number to 96 *minus* the product of 0·6 multiplied by 1·6, that is 95° Fahrenheit.

The readings of the barometer are to be corrected readings, in accordance with the corrections applicable to the instrument in use. The instrument must be compared periodically with the standard barometer at the office of the Government Analyst, and regulated thereby.

A.D. 1910.

VI.—Application of the Test to Viscous Fluids or Preparations.

If the flashing test has to be applied to substances of a viscous or semi-solid nature which cannot be poured (such as solutions of indiarubber in mineral naphtha), the mode of proceeding is as follows:—

One fluid ounce or two tablespoonfuls of the substance to be tested is placed in the cup, and the cover is put on. The air chamber in the water bath is filled with water to a depth of $1\frac{1}{2}$ in., and the temperature of the water bath is raised to 90°. The cup is then put into the bath, and the temperature of the water bath maintained at 90° throughout the test. After the lapse of 15 minutes the test flame is to be applied. If no flash occurs the heating is continued for another 15 minutes, and the test flame again applied, and so on until a flash takes place, or the temperature in the cup has reached 90°, and so on.

The temperature at which a flash occurs is the observed flashing point of the substance, and, subject to correction for atmospheric pressure as hereinbefore described, is the true flashing point.

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