

EXPLANATORY NOTE

(This Note is not part of the Regulations, but is intended to indicate their general purport.)

These Regulations impose requirements for the health, safety and welfare of persons employed in compressed air carried out in any factory and in any other premises or place to which the Factories Act (Northern Ireland), 1938, applies.

1963. No. 86

[C]

FACTORIES

Construction (Lifting Operations)

REGULATIONS, DATED 1ST MAY, 1963, MADE BY THE MINISTRY OF LABOUR AND NATIONAL INSURANCE UNDER THE FACTORIES ACTS (NORTHERN IRELAND), 1938 TO 1959.

ARRANGEMENT OF REGULATIONS

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SCHEDULES

First Schedule — Extent of exclusions under Regulation 6.

Second Schedule — Chains and lifting gear excepted under Regulation 41 (as to heat treatment).

The Ministry of Labour and National Insurance for Northern Ireland in exercise of powers conferred by Sections 47 and 65 of the Factories Act (Northern Ireland), 1938(a), Section 8 of the Factories Act (Northern Ireland), 1949(b), Section 28 of the Factories Act (Northern Ireland), 1959(c), and of all other powers in that behalf, hereby makes the following special Regulations.

(a) 2 Geo. 6. c. 23 (N.I.).

(b) 1949. c. 6.

(c) 1959. c. 16.

PART I

APPLICATION AND INTERPRETATION

Citation, commencement and revocation

1.—(1) These Regulations may be cited as the Construction (Lifting Operations) Regulations (Northern Ireland), 1963, and shall come into operation on the 2nd day of September, 1963.

(2) Regulations 34 to 74 of the Building Regulations (Northern Ireland), 1950(a), are hereby revoked.

Application of Regulations

2. These Regulations apply—

- (a) to building operations; and
- (b) to works of engineering construction,

undertaken by way of trade or business, or for the purpose of any industrial or commercial undertaking, or by or on behalf of the Crown or any municipal or other public authority, and to any line or siding which is used in connection therewith and for the purposes thereof and is not part of a railway or tramway.

Obligations under Regulations

3.—(1) It shall be the duty of every contractor, and every employer of workmen, who is undertaking any of the operations or works to which these Regulations apply—

- (a) to comply with such of the requirements of the following Regulations as affect him or any workman employed by him, that is to say, Regulation 42(1) in so far as it relates to the protection of the hoistway, and Regulation 47:

Provided that the requirements of the said Regulations shall be deemed not to affect any workman if and so long as his presence in any place is not in the course of performing any work on behalf of his employer and is not expressly or impliedly authorised or permitted by his employer; and

- (b) to comply with such of the requirements of Regulations 49 (1) to (6) and 50 as relate to any work, act or operation performed or about to be performed by any such contractor or employer of workmen,

and it shall be the duty of every contractor, and every employer of workmen, who erects, installs, works or uses any plant or equipment to which any of the provisions of Regulations 8 to 46, 48 and 49(7) applies, to erect, install, work or use any such plant or equipment in a manner which complies with those provisions.

(2) It shall be the duty of every person employed to comply with the requirements of such Regulations as relate to the doing of or refraining from an act by him and to co-operate in carrying out these Regulations and if he discovers any defect in the plant or equipment to report such defect without unreasonable delay to his employer or foreman, or to a person appointed by the employer in writing to supervise the safe conduct of the work generally.

Interpretation

4. In these Regulations, unless the context otherwise requires, the following expressions have the meanings hereby assigned to them respectively, that is to say—

(a) S.R. & O. (N.I.) 1950, No. 221.

- “approved” means approved for the time being by certificate of the Chief Inspector;
- “hoist” means a lifting machine, whether worked by mechanical power or not, with a carriage, platform or cage the movement of which is restricted by a guide or guides, but does not include a lifting appliance used for the movement of trucks or wagons on a line of rails;
- “lifting appliance” means a crab, winch, pulley block or gin wheel used for raising or lowering and a hoist, crane, sheer legs, excavator, dragline, piling frame, aerial cableway, aerial ropeway or overhead runway;
- “lifting gear” means a chain sling, rope sling, or similar gear, and a ring, link, hook, plate clamp, shackle, swivel or eye-bolt;
- “mobile crane” means a crane capable of travelling under its own power, but does not include a crane which travels on a line of rails;
- “plant or equipment” includes any plant, equipment, gear, machinery, apparatus or appliance, or any part thereof;
- “the principal Act” means the Factories Act (Northern Ireland), 1938, as amended by or under any other Act;
- “raising or lowering or as a means of suspension” where that expression occurs in Regulations 34, 35, 36, 40 and 41 means raising or lowering or as a means of suspension either of a load on a lifting appliance or lifting gear or of a scaffold but does not include the use of a rope or chain solely as a means of lashing or securing together two or more rigid members of a scaffold to form a frame or as a means of making a lapped joint or the use of a rope or chain solely for the movement of a load in a horizontal direction;
- “safe working load” means either the relevant safe working load required to be specified in the latest certificate of test obtained for the purposes of Regulations 28, 34, 35 and 46 or where no such certificate is required the relevant safe working load required to be marked or exhibited on the lifting appliance, lifting gear, chain, rope or other article of plant or equipment by Regulations 29 and 34;
- “scaffold” means any temporarily provided structure on or from which persons perform work in connection with operations or works to which these Regulations apply, and any temporarily provided structure which enables persons to obtain access to or which enables materials to be taken to any place at which such work is performed, and includes any working platform, working stage, gangway, run, ladder or step-ladder (other than an independent ladder or step-ladder which does not form part of such a structure) together with any guard-rail, toe-board or other safeguards and all fixings, but does not include a lifting appliance or a structure used merely to support such an appliance or to support other plant or equipment;
- “suspended scaffold” means a scaffold suspended by means of ropes or chains and capable of being raised or lowered by such means but does not include a boatswain’s chair or similar appliance.

PART II

EXEMPTIONS

Certificates of exemption

5. The Chief Inspector may (subject to such conditions, if any, as may be specified therein) by certificate in writing (which he may in his discretion

revoke at any time) exempt from all or any of the requirements of these Regulations—

- (a) any particular plant or equipment or any class or description of plant or equipment; or
- (b) any particular work or any class or description of work;

if he is satisfied that the requirements in respect of which the exemption is granted are not necessary for the protection of persons employed or are not reasonably practicable.

Lifting machinery in factory premises and in docks, etc.

6.—(1) Lifting appliances, chains, ropes and lifting gear to which this Regulation applies shall, as respects the incidental or occasional use thereof in or for the purposes of operations or works to which these Regulations apply, be excluded from the operation of the Regulations specified in column 1 of the First Schedule hereto to the extent specified in column 2 thereof and subject to the exceptions and conditions specified in column 3 thereof.

(2) This Regulation applies to any lifting appliance, chain, rope or lifting gear—

- (a) which forms part of the permanent equipment of a factory or other premises to which the safety provisions in sections 24 and 25 of the principal Act apply and which is used at that factory or those premises in raising or lowering for purposes other than the operations or works to which these Regulations apply, but is being used for such operations or works at that factory or those premises; or
- (b) which is regularly and ordinarily used in the processes of loading, unloading, moving or handling goods in, on or at any dock, wharf or quay or of loading, unloading or coaling any ship in any dock, harbour or canal, but is being used for operations or works to which these Regulations apply in, on or at a dock, wharf, quay, harbour or canal.

Delivery of loads with lifting gear attached

7. Where any article, material or other load intended for use in operations or works to which these Regulations apply is delivered at, or adjacent to, the site of such operations or works with a chain, rope or lifting gear attached thereto and designed for use as a means of raising and lowering that class of load when removing the same from the point of delivery to a position on the site, and the chain, rope or gear is free from patent defect whether of construction or quality and is not owned or hired by any contractor or employer of workmen who is undertaking any such operations or works as aforesaid on the site, then the requirements of Regulations 34, 35, 40 and 41 shall not apply in respect of the use of such chain, rope or lifting gear for raising or lowering the load so long as the chain, rope or gear remains attached to the article, material or load.

Hoists forming part of the permanent equipment

8. Regulations 10, 15, 42 to 46 and 48 shall not apply to a hoist forming part of the permanent equipment of any structure or underground shaft and which is regularly and ordinarily used for the carriage of persons or goods, but no such hoist shall be used for the purposes of any operations or works to which these Regulations apply unless the following conditions are complied with, that is to say—

- (a) the hoist shall not be so used for carrying persons unless a maximum number of persons to be carried at any one time has been specified by the maker or by an insurer of the hoist or by a competent firm of lift engineers carrying out periodic examinations of the hoist, and a greater number is not being carried;
- (b) the hoist shall not be so used for carrying materials, tools or other articles, other than light articles readily carried by a person who is riding in the hoist, unless a safe working load for the hoist has been specified by the maker or an insurer or firm as aforesaid and that safe working load is not being exceeded; and
- (c) on any occasion when the hoist has been used for raising or lowering for the purposes of such operations or works the hoistway gate at a landing place shall not be left open except where it is immediately necessary for it to be open to afford access to the hoist for some other purpose.

Hoists manufactured before the commencement of the Regulations

9. In the case of a hoist manufactured before the date of commencement of these Regulations, if it is not reasonably practicable to comply fully with any requirement of Regulations 42(2), 42(3), 44 or 48 it shall be sufficient if—

- (a) the hoist has been brought as near as is reasonably practicable into conformity with that requirement and a certificate that this has been done has been obtained from a competent person:

Provided that in the case of a hoist which at the date of commencement of these Regulations is used, and so long thereafter as it is continued to be used, in works of engineering construction, it shall be sufficient if the requirements of this paragraph are complied with within three years from the said date of commencement; or

- (b) there has been obtained in respect of the hoist a certificate under Regulation 72(2) of the Building Regulations (Northern Ireland), 1950, which certificate shall be deemed to be a certificate obtained under this Regulation.

PART III

LIFTING APPLIANCES

Construction, maintenance and inspection

10.—(1) Every lifting appliance and every part thereof including all working gear and all other plant or equipment used for anchoring or fixing such appliances shall—

- (a) be of good mechanical construction, sound material, adequate strength and free from patent defect;
- (b) be properly maintained;
- (c) as far as the construction permits be inspected at least once in every week by the driver, if competent for the purpose, or other competent person. A report of the results of every such inspection, signed by the person carrying out the inspection, shall be made forthwith in the prescribed form and containing the prescribed particulars.

(2) In the case of a site where the employer for whom the inspection was carried out has reasonable grounds for believing that the operations or works will be completed in a period of less than six weeks, the provision in this

Regulation requiring that a report shall be made and signed, in so far as it relates to lifting appliances not worked by mechanical power and all plant or equipment used for anchoring or fixing such appliances, shall be deemed to have been satisfied if the person in charge of the operations or works carried on by that employer at that site has himself carried out the inspection and is a competent person, and if, within one week of the date of the inspection, he reports to his employer in writing that the lifting appliance and plant or equipment were inspected by him and that he found them in good order, or observed certain defects as the case may be, and the date of such inspection and the results thereof together with the name of the person making the inspection are entered by the employer in the prescribed form together with the prescribed particulars.

Support, anchoring, fixing and erecting

11.—(1) Every lifting appliance shall be adequately and securely supported.

(2) (a) Every part of a stage, scaffold, framework or other structure; and

(b) every mast, beam, pole or other article of plant or equipment, supporting a lifting appliance or any part thereof shall (having regard to the nature of the lifting appliance, its lifting and reaching capacity and the circumstances of its use) be of good construction and adequate strength and shall be of sound material and free from patent defect.

(3) Every part of the framework of every crab or winch (other than a jack roll) including its bearers, shall be of metal.

(4) Any anchoring or fixing arrangements provided in connection with a lifting appliance shall be adequate and secure.

(5) Every temporary attachment or connection of a rope, chain or other plant or equipment, used in the erection or dismantling of any lifting appliance shall be adequate and secure.

(6) In the case of a crane which is on occasion dismantled or partially dismantled, any jib or boom which is separated from the crane in dismantling shall be clearly marked so as to indicate the crane of which it was a part.

Precautions where lifting appliance has travelling or slewing motion

12. On every stage, gantry or other place where a lifting appliance having a travelling or slewing motion is in use, an unobstructed passageway not less than two feet wide shall be maintained between any part of the appliance liable so to move and any guard-rails, fencing or other nearby fixture:

Provided that if at any time it is impracticable to maintain such a passageway at any place or point all reasonable steps shall be taken to prevent the access of any person to such place or point at such time.

Platforms for crane drivers and signallers

13.—(1) Where a platform is provided for the person or persons driving or operating a crane, or for any signaller, it shall be—

(a) of sufficient area for the persons employed thereon;

(b) close planked or plated; and

(c) provided with safe means of access;

and every side of every such platform being a side thereof from which a person is liable to fall a distance of more than six feet six inches shall be

provided with a suitable guard-rail or guard-rails of adequate strength, to a height of at least three feet above the platform and above any raised standing place on the platform, and with toe-boards up to a sufficient height being in no case less than eight inches and so placed as to prevent as far as possible the fall of persons, materials and tools from such platform.

(2) The space between any toe-board and the lowest guard-rail above it on any platform for the person or persons driving or operating a crane, or for any signaller, shall not exceed twenty-seven inches.

(3) Guard-rails and toe-boards required by this Regulation may be removed or remain unerected only for the time and to the extent necessary for the access of persons or the movement of materials.

Cabins for drivers

14.—(1) Subject to paragraphs (2) and (4), the driver of every power-driven lifting appliance shall be provided with a suitable cabin which shall—

- (a) afford him adequate protection from the weather; and
- (b) be so constructed as to afford ready access to such parts of the lifting appliance as are within the cabin and need periodic inspection or maintenance;

so, however, that no cabin shall be provided which prevents the driver from having such clear and unrestricted view as is necessary for the safe use of the appliance.

(2) Subject to paragraph (4), where reasonably practicable the cabin shall, before such lifting appliance is put into general use, be completely erected, or other adequate provision shall be made for the protection of the driver from the weather.

(3) Subject to paragraph (4), where reasonably practicable the cabin shall when in use during the cold weather be adequately heated by suitable means.

(4) Paragraphs (1), (2) and (3) shall not apply—

- (a) in cases where the driver is indoors or otherwise adequately protected from the weather; or
- (b) to a hoist other than a hoist operated only from one position alongside the winch; or
- (c) to lifting appliances mounted on wheels and having a maximum safe working load of one ton or less; or
- (d) to any machine incorporating a lifting appliance where the primary purpose of that machine is not that of a lifting appliance; or
- (e) to lifting appliances for occasional use or for use for only short periods.

Drums and pulleys

15. Every drum or pulley round which the chain or wire rope of any lifting appliance is carried shall be of suitable diameter and construction for the chain or rope used. Every chain or rope which terminates at the winding drum of a lifting appliance shall be properly secured thereto and at least two turns of such chain or rope shall remain on the drum in every operating position of the appliance.

Brakes, controls, safety devices, etc.

16.—(1) Every crane, crab and winch (other than a jack roll) shall be provided with an efficient brake or brakes or other safety device which will prevent the fall of the load when suspended, and by which the load can be effectively controlled whilst being lowered.

(2) On every lifting appliance every lever, handle, switch or other device provided for controlling the operation of any part of the appliance being a lever, handle, switch or other device whose accidental movement or displacement is liable to cause danger, shall, where practicable (unless it is so placed or the appliance is so constructed as to prevent accidental movement or displacement) be provided with a suitable spring or other locking arrangement to prevent the accidental movement or displacement:

Provided that in the case of a lifting appliance which at the date of commencement of these Regulations is used, and so long thereafter as it is continued to be used, in works of engineering construction, it shall be sufficient if the requirements of this paragraph are complied with within two years from the said date of commencement.

(3) Every lever, handle, switch or other device provided for controlling the operation of any part of a lifting appliance shall have upon or adjacent to it clear markings to indicate its purpose and mode of operation:

Provided that this paragraph shall not apply to rotating handles for raising or lowering the load in the case of a winch or non-derricking jib crane not operated by mechanical power.

Safe means of access

17. Where any person engaged on the examination, repair or lubrication of any lifting appliance is liable to fall a distance of more than six feet six inches there shall, so far as is reasonably practicable, be provided and maintained safe means of access to and egress from the place at which the person has to work, with (where necessary) adequate handholds and footholds.

Poles or beams supporting pulley blocks or gin wheels

18. No pulley block or gin wheel suspended from or supported by a pole or beam shall be used for raising or lowering materials unless it is effectively secured to the pole or beam and the pole or beam—

- (a) is of adequate strength for the purpose for which it is being used; and
- (b) is adequately and properly secured so as to support the pulley block or gin wheel and the load with safety and so as to prevent undue movement of the pole or beam.

Stability of lifting appliances

19.—(1) Appropriate precautions shall be taken to ensure the stability of lifting appliances used on a soft or uneven surface or on a slope.

(2) No crane shall be used for raising or lowering unless, so as to ensure stability, it is either—

- (a) securely anchored; or
- (b) adequately weighted by suitable ballast which shall be properly placed on the crane structure and sufficiently secured to prevent its being accidentally displaced.

No part of any rails on which a crane is mounted or the sleepers supporting such rails shall be used as anchorage for this purpose.

(3) The whole of the appliances for the anchorage or ballasting of a crane shall be examined by a competent person on each occasion before the crane is erected.

(4) After each erection of a crane on a site of operations or works to which these Regulations apply and after each removal of a crane about or to such a site, or any adjustment to any member of a crane, being a removal or adjustment which involves changes in the arrangements for anchoring or ballasting the crane, the security of the anchorage or the adequacy of the ballasting, as the case may be, shall, before the crane is taken into use, be tested by a competent person, by the imposition either—

- (a) of a load of twenty-five per cent. above the maximum load to be lifted by the crane as erected at the positions where there is the maximum pull on each anchorage, or
- (b) of a less load arranged to provide an equivalent test of the anchorage or ballasting arrangements.

A report of every such test and the results thereof, signed by the person carrying out the test, shall be made forthwith in the prescribed form and containing the prescribed particulars.

(5) If the person making tests under paragraph (4) considers that the maximum load which may safely be lifted by that crane as erected is less than the safe working load of the crane as defined in Regulation 4 he shall specify that maximum among the said particulars and a loading diagram appropriate to the stability of the crane as at the time of the test, taking into account, in the case of a crane mounted on wheels, the conditions of the track, and indicating a modified safe working load or loads shall be affixed in a position where it can readily be seen by the crane driver. Such modified safe working load or loads shall be deemed for the purpose of these Regulations to be the safe working load or loads of the crane as erected.

(6) Where the stability of a crane is secured by means of removable weights a diagram or notice indicating the position and amount of such weights shall be affixed on the crane where it can be readily seen.

(7) No crane shall be used or erected under weather conditions likely to endanger its stability. After exposure to weather conditions likely to have affected the stability of a crane, the anchorage arrangements and ballast shall be examined by a competent person as soon as practical and before the crane is used, and any necessary steps taken to ensure the stability of the crane.

Rail mounted cranes

20.—(1) All rails on which a crane moves shall—

- (a) be supported on a surface sufficiently firm to prevent undue movement of the rails;
- (b) have an even running surface, be sufficiently and adequately supported, and be of adequate section;
- (c) be jointed by fish plates or double chairs;
- (d) be securely fastened to sleepers or bearers;
- (e) be laid in straight lines or in curves of such radii that the crane can be moved freely and without danger of derailment; and
- (f) be provided with adequate stops or buffers on each rail at each end of the track.

All rails and equipment referred to in this paragraph shall be properly maintained:

Provided that requirements (c) and (d) shall not apply in the case of cranes on bridge rails or in the case of any crane if other adequate steps are taken

to ensure the proper junction of the rails and to prevent any material variation in their gauge.

(2) In the case of every crane mounted on rails either—

(a) the crane shall be provided with effective brakes for the travelling motion; or

(b) sprags, scotches or chocks shall be available, and used when necessary.

(3) Where a Scotch derrick crane is mounted on more than one bogie, trolley or wheeled carriage, the crane sleepers or land ties, and if necessary the bogies, trolleys or wheeled carriages shall be rigidly braced and properly connected together, and the rails on which each bogie, trolley or wheeled carriage moves shall be level. The crane shall be moved on the track only in a manner not liable to cause instability, racking or distortion either of the crane structure or of the supporting framework or track.

(4) Every travelling crane on rails shall be provided with guards to remove from the rails any loose material likely to cause danger.

Mounting of cranes

21. Every bogie, trolley or wheeled carriage on which a crane is mounted shall, having regard to the purposes for which the crane is being used, be of good construction, adequate strength and suitable to support the crane and shall be of sound material, free from patent defect and properly maintained.

Cranes with derricking jibs

22. On every crane having a derricking jib operated through a clutch there shall be provided and properly maintained an effective interlocking arrangement between the derricking clutch and the pawl sustaining the derricking drum which shall ensure that the clutch cannot be disengaged unless the pawl is in effective engagement with the derricking drum and the pawl cannot be disengaged unless the clutch is in effective engagement with the derricking drum:

Provided that this Regulation shall not apply to any crane in which—

(a) the hoisting drum and the derricking drum are independently driven; or

(b) the mechanism driving the derricking drum is self-locking.

Restriction on use of cranes

23.—(1) Without prejudice to paragraph (2), the hoisting mechanism of a crane shall not be used for any purpose other than raising or lowering a load vertically unless no undue stress is imposed on any part of the crane structure or mechanism, and the stability of the crane is not thereby endangered and unless such use is supervised by a competent person.

(2) A crane with a derricking jib shall not be used with the jib at a radius exceeding the maximum radius required to be specified for the jib in the certificate of test and examination required by Regulation 28.

Use of cranes with timber structural member prohibited

24. No crane which has any timber structural member shall be used.

Erection of cranes under supervision

25. A crane shall not be erected except under the supervision of a competent person.

Competent persons to operate lifting appliances and give signals

26.—(1) A lifting appliance shall not be operated otherwise than by a person trained and competent to operate that appliance except that it shall be permissible for the appliance to be operated by a person who is under the direct supervision of a qualified person for the purpose of training.

(2) No person under eighteen years of age shall be employed (except under the direct supervision of a competent person for the purpose of training) either to give signals to the operator of any lifting appliance driven by mechanical power or to operate any such appliance.

(3) Subject to paragraph (4), if the person operating a lifting appliance has not a clear and unrestricted view of the load, or, where there is no load, of the point of attachment for a load, and of its vicinity, throughout the operation, except at any place where such view is not necessary for safe working, there shall be appointed and suitably stationed one or more competent persons as may be necessary to give necessary signals to the operator:

Provided that where and in so far as it is impracticable to comply with the foregoing requirements of this paragraph effective measures shall be taken to enable the driver or operator of the lifting appliance—

(a) to ascertain the position of the load, or point of attachment for a load, when it is in the vicinity of a loading or unloading point or of any other place at which danger is reasonably to be anticipated; or

(b) to ensure the safe movement of the load by other means.

(4) The provisions of paragraph (3) shall not apply—

(a) in the case of a hoist, of an aerial cableway, or of an aerial ropeway; or

(b) (in a case other than that of a hoist) as respects places where the appliance can raise or lower the load (or point of attachment for a load) vertically only, without any horizontal or slewing motion, if for safe working the driver or operator of the appliance needs information related to the movement, stopping or position of the load, or point of attachment for a load, when it is at or in the immediate vicinity of certain points only, and effective arrangements are made by means of a signalling system, position indicators or otherwise, for providing the driver or operator with any such information necessary for safe working.

(5) There shall be efficient signalling arrangements between the driver or operator and persons employed at a loading or unloading point of an aerial cableway or aerial ropeway.

Signals

27.—(1) Every signal given for the movement or stopping of a lifting appliance shall be distinctive in character and such that the person to whom it is given is able to hear or see it easily.

(2) Devices or apparatus used for giving sound, colour or light signals for the purposes aforesaid shall be properly maintained, and the means of communication shall be adequately protected from accidental interference.

Testing and examination of cranes, etc.

28.—(1) Subject to paragraph (4), no crane, crab or winch shall be used unless it has been tested and thoroughly examined by a competent person within the previous four years and no pulley block, gin wheel or sheer legs

shall be used in the raising or lowering of any load weighing one ton or more unless it has been tested and thoroughly examined by a competent person.

(2) Subject to paragraph (4), no crane, crab or winch shall be used after any substantial alteration or repair affecting its strength or stability until it has been tested and thoroughly examined by a competent person and no pulley block, gin wheel or sheer legs shall, after any substantial alteration or repair, be used in the raising or lowering of any load weighing one ton or more until it has been tested and thoroughly examined by a competent person.

(3) Subject to paragraph (4), no lifting appliance shall be used unless it has been thoroughly examined by a competent person within the previous fourteen months and since it has undergone any substantial alteration or repair.

(4) Nothing in paragraphs (1) to (3) shall apply to a hoist.

(5) No crane, crab, winch, pulley block or gin wheel shall be used unless there has been obtained in such form as may be prescribed as respects the kind of lifting appliance tested and examined a certificate of any test and examination required by paragraphs (1) and (2) signed by the person making or responsible for the carrying out of the test and examination and specifying—

- (a) the safe working load or loads;
- (b) in the case of a crane with a variable operating radius (including a crane with a derricking jib), the radii of the jib, trolley or crab appropriate to the specified safe working loads; and
- (c) in the case of a crane with a derricking jib, the maximum radius at which the jib may be worked.

(6) A report in writing containing the prescribed particulars of the results of every test or examination required by paragraphs (1) to (3), signed by the person carrying out the test or examination, shall be made within twenty-eight days:

Provided that this paragraph shall not apply to a test or examination of which a certificate has been obtained in accordance with paragraph (5).

(7) The person making the report of any test or examination required by paragraphs (1) to (3) shall within twenty-eight days of the completion of the test or examination send to the Chief Inspector a copy of the report in every case where the test or examination shows that the plant or equipment cannot continue to be used with safety unless certain repairs are carried out immediately or within a specified time.

Marking of safe working loads

29.—(1) The safe working load or safe working loads and a means of identification shall be plainly marked—

- (a) upon every crane, crab or winch;
- (b) upon every pulley block, gin wheel, sheer legs, derrick pole, derrick mast or aerial cableway used in the raising or lowering of any load weighing one ton or more.

(2) Every crane of variable operating radius (including a crane with a derricking jib) shall—

- (a) have plainly marked upon it the safe working load at various radii of the jib, trolley or crab, and, in the case of a crane with a derricking jib, the maximum radius at which the jib may be worked; and
- (b) be fitted with an accurate indicator, clearly visible to the driver, showing the radius of the jib, trolley or crab, at any time and the safe working load corresponding to that radius.

Indication of safe working load of jib cranes

30.—(1) No jib crane having either a fixed or a derricking jib (other than a mobile crane) shall be used unless it is fitted with an approved type of automatic safe load indicator which shall be properly maintained. Every such indicator shall be tested by a competent person other than the crane driver after erection or installation of the crane for the purpose of any operations or works to which these Regulations apply and before the crane is taken into use. The indicator shall be inspected in any case at intervals not exceeding one week, when the crane is in use, by the person carrying out the inspection required under sub-paragraph (c) of paragraph (1) of Regulation 10 and the results of every such inspection shall be reported in the manner specified in that sub-paragraph.

(2) No mobile crane having either a fixed or a derricking jib shall be used unless it is fitted with an approved type of automatic safe load indicator which shall be properly maintained. Every such indicator shall be tested by a competent person before the crane is taken into use—

- (a) on each occasion after it has been wholly or partially dismantled; and
- (b) after each erection, alteration or removal of the crane for the purpose of any operations or works to which these Regulations apply, being an erection, alteration or removal likely to have affected the proper operation of the indicator.

The indicator shall be inspected in any case at intervals not exceeding one week, when the crane is in use, by the person carrying out the inspection required under sub-paragraph (c) of paragraph (1) of Regulation 10 and the results of every such inspection shall be reported in the manner specified in that sub-paragraph.

(3) A report of the results of every test required by this Regulation, signed by the person carrying out the test, shall be made forthwith in the prescribed form and containing the prescribed particulars.

(4) This Regulation does not apply—

- (a) to any guy derrick crane, being a crane of which the mast is held upright solely by means of ropes with the necessary fittings and tightening screws;
- (b) to any hand crane which is being used solely for erecting or dismantling another crane; or
- (c) to any crane having a maximum safe working load of one ton or less; or
- (d) until the expiration of two years after the date of commencement of these Regulations, to any excavator adapted for use as a crane.

Load not to exceed safe working load

31. None of the following appliances, nor any part of any such appliance, shall be loaded beyond the safe working load, that is to say, cranes, crabs, winches, pulley blocks, gin wheels, sheer legs, derrick poles and derrick masts; so, however, that for the purpose of making tests of any such appliance the safe working load may be exceeded by such an amount as a competent person appointed to carry out the tests may authorise.

Precautions on raising or lowering loads

32.—(1) Where there is lifted on a crane, crab, winch (other than a piling winch), sheer legs or aerial cableway a load which is equal to or slightly less than the relevant safe working load and which is not already sustained wholly by the appliance, the lifting shall be halted after the load has been raised a short distance and before the operation is proceeded with.

(2) Where more than one lifting appliance is required to raise or lower one load—

- (a) the plant or equipment used shall be so arranged and fixed that no such lifting appliance shall at any time be loaded beyond its safe working load or be rendered unstable in the raising or lowering of the load; and
- (b) a competent person shall be specially appointed to supervise the operation.

Scotch and guy derrick cranes

33.—(1) The jib of a Scotch derrick crane shall not be erected between the back stays of the crane.

(2) No load which lies in the angle between the back stays of a Scotch derrick crane shall be moved by that crane.

(3) Appropriate measures shall be taken to prevent the foot of the king post of any Scotch derrick crane from being lifted out of its socket or support whilst in use.

(4) Where the guys of a guy derrick crane cannot be fixed at approximately equal inclinations to the mast and so that the angles between adjacent pairs of guys are approximately equal such other measures shall be taken as will ensure the stability of the crane.

PART IV

CHAINS, ROPES AND LIFTING GEAR

Construction, testing, examination and safe working load

34.—(1) Subject to the provisions of paragraph (2), no chain, rope or lifting gear shall be used in raising or lowering or as a means of suspension unless—

- (a) it is of good construction, sound material, adequate strength, suitable quality, and free from patent defect; and
- (b) (except in the case of a wire rope used before the commencement of these Regulations or of a fibre rope or fibre rope sling) it has been tested and examined by a competent person and there has been obtained in such form as may be prescribed a certificate of such test and examina-

- tion specifying the safe working load and signed by the person making or responsible for the carrying out of the test and examination; and
- (c) it is marked in plain legible figures and letters with the safe working load and means of identification.

(2) A rope or rope sling need not be marked with the safe working load if its safe working load is contained in the report required by Regulation 40 and the rope or sling is so marked as to enable its safe working load to be ascertained from the said report or if, in the case of a rope or rope sling to which sub-paragraph (b) of paragraph (1) of this Regulation does not apply, its safe working load can be ascertained from a table of safe working loads posted in a prominent position on the site of the operations or works; and in the case of a rope or rope sling which is not required to have been tested and which is not marked with the safe working load, the safe working load required to be entered in the said report or required to be shown by the table, as the case may be, shall be deemed for the purpose of these Regulations to be the safe working load of the rope or rope sling.

(3) No wire rope shall be used in raising or lowering or as a means of suspension if in any length of ten diameters the total number of visible broken wires exceeds five per cent. of the total number of wires in the rope.

(4) No chain, rope or lifting gear shall be loaded beyond its safe working load except for the purpose of making tests and then only to such extent as a competent person appointed to carry out the tests may authorise.

Testing of chains, rings, etc., altered or repaired by welding

35. No chain, ring, link, hook, plate clamp, shackle, swivel or eye-bolt which has been lengthened, altered or repaired by welding shall be used in raising or lowering or as a means of suspension unless since such lengthening, alteration or repair it has been tested and thoroughly examined by a competent person and there has been obtained in the prescribed form a certificate of such test and thorough examination signed by him or by the person responsible for the carrying out of the test and thorough examination and specifying the safe working load:

Provided that the requirements of this Regulation as to testing and certification shall not apply to a chain attached to the bucket of either a dragline or an excavator.

Hooks

36. Every hook used for raising or lowering or as a means of suspension shall either—

- (a) be provided with an efficient device to prevent the displacement of the sling or load from the hook; or
- (b) be of such shape as to reduce as far as possible the risk of such displacement.

Slings

37.—(1) Every sling used for raising or lowering on a lifting appliance shall be securely attached to the appliance, and the method of attachment shall not be a method likely to result in damage to any part of the sling or to any lifting gear supporting it.

- (2) No double or multiple sling shall be used for raising or lowering if—

- (a) the upper ends of the sling legs are not connected by means of a shackle, ring or link of adequate strength; or
- (b) the safe working load of any sling leg is exceeded as a result of the angle between the sling legs.

Edges of load not to come into contact with sling, etc.

38. Adequate steps shall be taken by the use of suitable packing or otherwise to prevent the edges of the load from coming into contact with any sling, rope or chain, where this would cause danger.

Knotted chains, etc.

39.—(1) A load shall not be raised, lowered or suspended on a chain or wire rope which has a knot tied in any part of the chain or rope under direct tension.

(2) No chain which is shortened or joined to another chain by means of bolts and nuts inserted through the links shall be used for raising, lowering or suspending any load.

Examination of chains, ropes and lifting gear

40. No chain, rope or lifting gear shall be used for raising or lowering or as a means of suspension unless it has been thoroughly examined by a competent person at least once within the previous six months; so, however, that chains, ropes and lifting gear not in regular use need only be so examined when necessary.

A report in writing containing the prescribed particulars of the results of every such examination, signed by the person carrying out the examination, shall be made forthwith.

Annealing of chains and lifting gear

41. A chain or lifting gear (other than a rope sling or lifting gear of a class or description specified in the Second Schedule or exempted by certificate of the Chief Inspector upon the ground that it is made of such material or so constructed that it cannot be subjected to heat treatment without risk of damage) shall not be used in raising or lowering or as a means of suspension unless—

- (a) it has been effectively annealed or subjected to some appropriate form of heat treatment under the supervision of a competent person within the previous fourteen months or, in the case of chains or slings of half-inch bar or smaller material, within the previous six months; so, however, that chains or lifting gear not in regular use or used solely on lifting appliances worked by hand need be annealed or subjected to appropriate heat treatment only when necessary; and
- (b) a report has been made in writing containing the prescribed particulars of every annealing or appropriate heat treatment, signed by the competent person under whose supervision the annealing or heat treatment was carried out.

PART V

SPECIAL PROVISIONS AS TO HOISTS

Safety of hoistways, platforms and cages

42.—(1) The hoistway of every hoist shall at all points at which access to the hoistway is provided or at which persons are liable to be struck

by any moving part of the hoist be efficiently protected by a substantial enclosure, and the enclosure shall where access to the hoist is needed be fitted with gates. Such enclosure and gates shall where practicable extend to a height of at least six feet six inches except where a lesser height is sufficient to prevent any person falling down the hoistway and there is no risk of any person coming into contact with any moving part of the hoist, but shall in no case be less than three feet. Gates so fitted shall be kept closed except at a landing place where the platform or cage is at rest and it is for the time being necessary for the gate to be open for the purpose of loading or unloading goods, plant or material, or to allow persons to enter or leave the cage; and without prejudice to the obligation of every contractor and employer of workmen under these Regulations, it shall be the duty of every person, immediately after using any gateway, to see that the gate is closed unless it is for the time being necessary for the gate to be open for any of the purposes aforesaid.

(2) In connection with every hoist there shall where practicable be provided and maintained efficient devices which will support the platform or cage together with its safe working load in the event of failure of the hoist rope or ropes or any part of the hoisting gear.

(3) In connection with every hoist there shall be provided and maintained efficient automatic devices which will ensure that the platform or cage does not over-run the highest point to which it is for the time being constructed to travel.

Operation of hoists

43.—(1) The construction and the installation arrangements of every hoist shall where practicable be such that it can be operated at any one time only from one position and a hoist shall not be operated from the cage unless the requirements of Regulation 48 are complied with.

(2) If a person operating a hoist has not a clear and unrestricted view of the platform or cage throughout its travel, except at points where such a view is not necessary for safe working, then effective arrangements shall be made for signals for operating the hoist to be given to him from each landing place at which the hoist is used and to enable him to stop the platform or cage at the appropriate level.

Winches

44. Where a hoist is operated by means of a winch, the winch shall be so constructed that the brake is applied when the control lever, handle or switch is not held in the operating position, and the winch shall not be a winch fitted with a pawl and ratchet gear on which the pawl has to be disengaged before the platform or cage can be lowered.

Safe working load and marking of hoists

45. The safe working load shall be plainly marked on every hoist platform or cage and no load greater than that load shall be carried, except that for the purpose of carrying out a test the safe working load may be exceeded by such amount as a competent person appointed to carry out the test may authorise. In the case of a hoist used for carrying persons the maximum number of persons to be carried at any one time shall also be so marked, and a greater number of persons shall not be so carried. In the case of any other hoist there shall be a readily legible notice on the platform or cage stating that the carriage of persons is prohibited.

Test and examination of hoists

46.—(1) No hoist shall be used unless—

- (a) in the case of a hoist manufactured or substantially altered or substantially repaired after the date of commencement of these Regulations, it has, since such manufacture, alteration or repair, as the case may be, been tested and thoroughly examined by a competent person, and there has been obtained, in such form as may be prescribed, a certificate of such test and examination, signed by the person making or responsible for the carrying out of the test and examination and specifying the safe working load of the hoist and in the case of a hoist used for carrying persons the maximum number of persons to be carried at one time;
- (b) in the case of use for carrying persons, it has, since it was last erected or the height of travel of the cage was last altered, whichever is the later, been tested and thoroughly examined by a competent person and a report of the results of such test and examination, signed by the person making or responsible for the carrying out of the test and examination, has been made in the prescribed form and containing the prescribed particulars; and
- (c) it has been thoroughly examined by a competent person at least once within the previous six months.

(2) A report in writing containing the prescribed particulars of the results of every examination required by sub-paragraph (c) of the foregoing paragraph, signed by the person making or responsible for the carrying out of the examination, shall be made within twenty-eight days.

(3) The person making the report of any test or examination required by paragraph (1) shall within twenty-eight days of the completion of the test or examination send to the Chief Inspector a copy of the report in every case where the test or examination shows that the hoist cannot continue to be used with safety unless certain repairs are carried out immediately or within a specified time.

PART VI

CARRIAGE OF PERSONS AND SECURENESS OF LOADS

Carrying persons by means of lifting appliances

47.—(1) No person shall be raised, lowered or carried by a power driven lifting appliance except—

- (a) on the driver's platform in the case of a crane; or
- (b) on a hoist; or
- (c) on an approved suspended scaffold; or
- (d) as permitted by paragraph (2).

(2) A person may be raised, lowered or carried by a power driven lifting appliance otherwise than in accordance with the provisions of paragraph (1) only—

- (a) in circumstances where the use of a hoist or of an approved suspended scaffold is not reasonably practicable and the requirements of paragraph (3) are complied with; or
 - (b) on an aerial cableway or aerial ropeway provided that the requirements of sub-paragraphs (b) to (d) of paragraph (3) are complied with.
- (3) The requirements referred to in paragraph (2) are—

- (a) that the appliance can be operated from one position only;
- (b) that any winch used in connection with the appliance shall comply with the requirements of Regulation 44;
- (c) that no person shall be carried except—
 - (i) in a suitable chair or cage, or
 - (ii) in a suitable skip or other receptacle at least three feet deep; and any such chair, cage, skip or other receptacle shall be of good construction, sound material, adequate strength and properly maintained, and shall be provided with suitable means to prevent any occupant falling out and shall not contain material or tools liable to interfere with his handhold or foothold or otherwise endanger him; and
- (d) that suitable measures shall be taken to prevent the chair, cage, skip or other receptacle from spinning or tipping in a manner dangerous to any occupant.

Hoists carrying persons

48.—(1) No person shall be carried by a hoist unless it is provided with a cage which—

- (a) is so constructed as to prevent, when the cage gate or gates are shut, any person carried from falling out or from being trapped between any part of the cage and any fixed structure or other moving part of the hoist or from being struck by articles or materials falling down the hoistway; and
- (b) is fitted on each side from which access is provided to a landing place with a gate which, so far as is reasonably practicable, shall have efficient interlocking or other devices to secure that the gate cannot be opened except when the cage is at a landing place and that the cage cannot be moved away from any such place until the gate is closed.

(2) Every gate in the hoistway enclosure of a hoist used for carrying persons shall be fitted with efficient interlocking or other devices to secure that the gate cannot be opened except when the cage is at the landing place, and that the cage cannot be moved away from the landing place until the gate is closed.

(3) In connection with every hoist used for carrying persons there shall be provided suitable efficient automatic devices which will ensure that the cage comes to rest at a point above the lowest point to which the cage can travel.

Secureness of loads

49.—(1) Every part of a load shall be securely suspended or supported whilst being raised or lowered and shall be adequately secured to prevent danger from slipping or displacement.

(2) Where by reason of the nature or position of the operation a load is liable, whilst being moved on a lifting appliance or lifting gear, to come into contact with any object so that the object may become displaced, special measures shall be adopted to prevent the danger so far as reasonably practicable.

(3) Every container or receptacle used for raising or lowering stone, bricks, tiles, slates or other objects shall be so enclosed, constructed or designed as to prevent the accidental fall of such objects;

Provided that this requirement shall not apply to a grab, shovel or other similar excavating receptacle if effective steps are taken to prevent any person being endangered by a fall of objects therefrom.

(4) Goods or loose material shall not be placed directly on a platform of a hoist unless such platform is enclosed or other effective precautions are taken where necessary to prevent the fall of any such goods or material.

(5) No truck or wheelbarrow shall be carried on a hoist platform unless it is efficiently scotched or secured on the platform.

(6) No loaded truck or wheelbarrow shall be carried on the open platform of a hoist unless the truck or wheelbarrow is so loaded that no part of the load is liable to fall off.

(7) No load shall be left suspended from a lifting appliance unless a competent person is actually in charge of the appliance.

PART VII

KEEPING OF RECORDS

Reports, certificates, etc.

50.—(1) The reports required by Regulations 10, 19 (4) and (5), 30 and 46(1)(b) shall be kept on the site of the operations or works and when there are no relevant operations or works shall be kept at an office of the contractor or employer for whom the inspection, test or examination, as the case may be, was carried out:

Provided that in the case of a site where the contractor or employer has reasonable grounds for believing that the operations or work will be completed in a period of less than six weeks, the contractor or employer may keep the reports required by Regulation 10 at his office.

(2) All other reports and every certificate or other documents required for the purposes of these Regulations shall be kept either on the site of the relevant operations or works or at an office of the contractor or employer for whom the report was made or the certificate or document was obtained or of the owner of the plant or equipment to which the certificate relates.

(3) All reports, certificates and other documents required for the purposes of these Regulations shall at all reasonable times be open to inspection by any of the inspectors appointed under Section 128 of the principal Act, and the person keeping any such report, certificate or other document shall send to any such inspector such extracts therefrom or copies thereof as the inspector may from time to time require for the purpose of the execution of his duties under the Factories Acts (Northern Ireland), 1938 to 1959.

Sealed with the Official Seal of the Ministry of Labour and National Insurance for Northern Ireland this 1st day of May, nineteen hundred and sixty-three.

(L.S.)

W. Slinger,
Assistant Secretary.

FIRST SCHEDULE

Extent of Exclusions under Regulation 6

<i>Regulation</i>	<i>Extent of exclusion</i>	<i>Exceptions and conditions</i>
10	Requirement (c) of paragraph (1)	—
11	Paragraph (5)	—
12	The whole Regulation ..	—
13	The whole Regulation except requirements (a) and (c) of paragraph (1)	—
14	The whole Regulation ..	—
16	Paragraphs (2) and (3) ..	—
19	Paragraphs (4) and (5) ..	Save that where the crane is specially erected for use in the operations or works to which these Regulations apply, the crane shall before such use be tested in accordance with paragraph (4), and a record shall be kept of the particulars of the tests and paragraph (5) shall then apply.
20	Requirement (f) of paragraph (1) and paragraph (4) ..	—
22	The whole Regulation ..	—
28	The whole Regulation ..	—
29	Requirement (b) of paragraph (2)	—
30	The whole Regulation ..	—
34	Sub-paragraph (c) of paragraph (1)	If there are available to any person using the chain, rope or gear, means of ascertaining its safe working load.
36	The whole Regulation ..	—
40	The provisions relating to the keeping of a register	—
41	Sub-paragraph (b)	—

SECOND SCHEDULE

**Chains and Lifting Gear excepted under Regulation 41
(as to Heat Treatment)**

- (1) Chains made of malleable cast-iron.
- (2) Plate link chains.
- (3) The following when made of steel or of any non-ferrous metal, namely, chains, rings, links, hooks, plate clamps, shackles, swivels and eye-bolts.
- (4) Pitched chains working on sprocket or pocketed wheels.
- (5) The following when permanently attached to pitched chains, pulley blocks or weighing machines, namely, rings, links, hooks, shackles and swivels.
- (6) The following when having screw-threaded parts or ball-bearings or other case-hardened parts, namely, hooks, eye-bolts, and swivels.
- (7) Socket shackles secured to wire ropes by white metal cappings.
- (8) Bordeaux connections.

EXPLANATORY NOTE

(This Note is not part of the Regulations, but is intended to indicate their general purport.)

For the protection of the persons employed, these Regulations impose requirements as to the construction, use and examination of lifting appliances, lifting gear and lifting tackle used for the purposes of building operations and works of engineering construction. In the case of building operations these Regulations replace similar requirements in the Building Regulations (Northern Ireland), 1950.

1963. No. 87

[C]

FACTORIES

Construction (General Provisions)

REGULATIONS, DATED 1ST MAY, 1963, MADE BY THE MINISTRY OF LABOUR AND NATIONAL INSURANCE UNDER THE FACTORIES ACTS (NORTHERN IRELAND), 1938 TO 1959.

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