

1970. No. 132

[C]

COAL AND OTHER MINES**Shafts, Outlets and Roads**

REGULATIONS, DATED 1ST JUNE 1970, MADE BY THE MINISTRY OF COMMERCE UNDER SECTIONS 13(2), 28(1), 32(1), 39(1), 40(1), 42(4), 45 AND 120 OF THE MINES ACT (NORTHERN IRELAND) 1969.

WHEREAS in pursuance of Part I of Schedule 2 to the Mines Act (Northern Ireland) 1969(a) the Ministry of Commerce has published notice of its intention to make the following regulations and has not received any objection to the draft thereof in respect to which it is required to refer the draft regulations for inquiry and report:

NOW, THEREFORE, the Ministry of Commerce in exercise of the powers conferred on it by sections 13(2), 28(1), 32(1), 39(1), 40(1), 42(4), 45 and 120 of the Mines Act (Northern Ireland) 1969 and of all other powers enabling it in that behalf, hereby makes the following regulations:—

PART I**GENERAL***Citation*

1. These regulations may be cited as the Coal and Other Mines (Shafts, Outlets and Roads) Regulations (Northern Ireland) 1970.

Application

2. These regulations shall apply to every mine of coal, stratified ironstone, shale or fireclay, and in these regulations unless otherwise expressly provided, "mine" means such a mine.

Interpretation

3.—(1) In these regulations the following expressions have the meanings hereby respectively assigned to them, that is to say—

"the Act" means the Mines Act (Northern Ireland) 1969;

"banksman" has the meaning assigned thereto in regulation 29;

"deputy" has the meaning assigned thereto in the Coal and Other Mines (Managers and Officials) Regulations (Northern Ireland) 1970(b);

"kibble" includes any form of bucket, basket or barrel in which things can be raised or lowered in a shaft or staple-pit in the course of being sunk;

"locomotive" means a mechanically propelled vehicle running on rails and constructed or used for hauling other vehicles;

"mine" has the meaning assigned thereto in regulation 2;

"the Ministry" means the Ministry of Commerce;

"onsetter" has the meaning assigned thereto in regulation 29;

"travelling onsetter" has the meaning assigned thereto in regulation 40.

(a) 1969. c. 6 (N.I.).

(b) S.R. & O. (N.I.) 1970, No. 128.

(2) Any reference to a shaft or staple-pit in the course of being sunk shall (unless the contrary intention appears) include a reference to a shaft or staple-pit being driven upwards.

(3) Without prejudice to section 151 of the Act, for the purposes of these regulations anything for the time being approved under the corresponding provision of the Mines and Quarries Act 1954(c) or regulations made thereunder shall be deemed to be approved by the Ministry, unless the Ministry, by notice published in the *Belfast Gazette* and otherwise brought to the notice of persons concerned in such manner as the Ministry thinks fit, directs that it shall not be so deemed.

(4) Expressions to which meanings are assigned by the Act or by these regulations shall (unless the contrary intention appears) have the same meanings in any document issued under the provisions of these regulations.

PART II

WINDING AND HAULAGE APPARATUS IN SHAFTS, STAPLE-PITS AND UNWALKABLE OUTLETS

4. At any shaft or unwalkable outlet which is provided at a mine for affording to persons employed below ground therein means of ingress or egress and in the case of which the vertical distance between the top of the shaft or the point at which the outlet reaches the surface, as the case may be, and the lowest entrance to the shaft or outlet exceeds one hundred and fifty feet, being a shaft or outlet at a mine at which more than thirty persons are employed below ground, the apparatus for carrying persons provided in pursuance of subsection (1) of section 28 of the Act shall be mechanically operated winding apparatus or mechanically operated rope haulage apparatus as the case may be.

5. Where mechanically operated winding apparatus or mechanically operated rope haulage apparatus is used for carrying persons through any shaft, staple-pit or unwalkable outlet, the engine shall be firmly fixed and completely separated by a substantial partition from any other such engine which is or may be in use at the same time and also from any other machinery:

Provided that the Ministry may by notice served on the manager of the mine exempt an engine from the requirements of this regulation.

6. Where mechanically operated winding apparatus or mechanically operated rope haulage apparatus comprises a drum shaft not less than ten inches in diameter, that drum shaft shall be bored longitudinally at the centre.

Brakes and indicator

7.—(1) Where mechanically operated winding apparatus or mechanically operated rope haulage apparatus is used for carrying persons through a shaft, staple-pit or unwalkable outlet, there shall be provided one or more brakes on the drum or drum shaft being brakes which—

- (a) if there are two cages or carriages, will hold the drum stationary when the loads are balanced and the maximum torque is applied thereto in either direction by the engine; or

- (b) if there is only one cage or carriage, will hold the drum stationary when a fully loaded cage or carriage is half way down the shaft, staple-pit or outlet and the maximum torque is applied thereto downwards by the engine:

Provided that the Ministry may by notice served on the manager of the mine exempt an engine from the requirements of this paragraph.

(2) Where such apparatus is so used, there shall be provided a suitable indicator (not being merely a mark on the rope or drum) showing the position of each cage or carriage in the shaft, staple-pit or outlet. That indicator shall be so placed as to be seen easily by the person operating the engine.

(3) Where winding apparatus or rope haulage apparatus (not being mechanically operated winding apparatus or rope haulage apparatus) is installed at a shaft, staple-pit or unwalkable outlet, there shall be provided on the drum or drum shaft a locking device or brake which will hold the drum stationary when a fully loaded cage or carriage is at any point in the shaft, staple-pit or outlet.

(4) In this regulation "drum" and "drum shaft" shall include a sheave and sheave shaft respectively and in relation to a shaft or staple-pit in the course of being sunk "cage" shall include a kibble.

Flanges and horns

8. Where mechanically operated winding apparatus or mechanically operated rope haulage apparatus is used for carrying persons through a shaft, staple-pit or unwalkable outlet, there shall be provided on the drum or sheave such flanges or horns and, if the drum is conical, such other devices as will prevent the rope from slipping off.

Prevention of overwinding

9.—(1) Where mechanically operated winding apparatus or mechanically operated rope haulage apparatus is ordinarily used for carrying persons through a shaft or unwalkable outlet and the speed of winding or haulage can exceed twelve feet per second, there shall be provided an effective automatic contrivance to prevent overwinding so constructed as—

- (a) to prevent the descending cage or carriage from being landed at the lowest entrance to, or the bottom of, the shaft or unwalkable outlet at a speed exceeding five feet per second; and
- (b) to control the movement of the ascending cage or carriage to prevent danger to any persons therein.

(2) Unless such automatic contrivance is in full and fixed engagement with the engine, it shall be fully engaged whenever persons are to be carried through the shaft or outlet, and there shall be provided an automatic indicator, in such position at the top of the shaft or outlet as to be easily seen by any person transmitting signals therefrom, showing whether or not the contrivance is so engaged.

(3) The Ministry may, if an inspector is of opinion that special circumstances subsist at any mine, by notice served on the manager thereof exempt any such winding or haulage apparatus thereat from the requirements of this regulation.

Construction of cages and carriages and apparatus ancillary thereto

10.—(1) No person shall be carried through a shaft or unwalkable outlet otherwise than in a cage or carriage which complies with the requirements of the next following paragraph except—

- (a) for the purposes of sinking operations; or
- (b) for the purposes of examining or repairing a shaft or outlet or any machinery or appliances therein; or
- (c) for the purposes of accompanying bulky materials that cannot be raised or lowered in such a cage or carriage; or
- (d) in pursuance of a notice of exemption served by the Ministry on the manager of the mine.

(2) Every cage or carriage which is used for carrying persons through a shaft or unwalkable outlet shall be covered in completely at the top, closed in at the two sides sufficiently to prevent persons or things projecting beyond the sides and provided with suitable gates at the ends and with a rigid bar easily reached by all persons in it.

(3) The door or gate of every cage used for carrying persons through a shaft shall be so constructed and installed that it cannot project beyond the side or end of the cage:

Provided that the Ministry may by notice served on the manager of a mine exempt any such cage thereat from the provisions of this paragraph.

11. Every cage or carriage which is used for carrying vehicles through a shaft, staple-pit or unwalkable outlet shall be provided with catches or other suitable contrivances to prevent them from falling out.

Guides

12. In every shaft and staple-pit provided with winding apparatus, being a shaft or staple-pit in the case of which the distance between the top thereof and the lowest entrance thereto exceeds one hundred and fifty feet, or being a shaft or staple-pit in the course of being sunk of a depth exceeding three hundred feet, guides shall be provided for the cage or kibble:

Provided that the Ministry may by notice served on the manager of the mine exempt a shaft or staple-pit from the requirements of this regulation.

Keps

13.—(1) In every shaft keps for supporting cages when at rest shall be provided at the highest landing to which the cages are raised, may be provided at the lowest entrance to the shaft but shall not be provided at any intermediate entrance thereto.

(2) Nothing in the last preceding paragraph shall require the provision of keps in a shaft in which the cages are raised and lowered by means of the friction of a rope on a winding sheave and the Ministry may by notice served on the manager of the mine exempt any other shaft from that requirement.

(3) Keps shall be used when persons are entering or leaving a cage at a place at which they are provided.

Detaching gear

14.—(1) Where mechanically operated winding apparatus is ordinarily used for carrying persons through a shaft, there shall be provided appropriate gear for detaching each cage from the rope and holding it stationary in the event of overwinding when it is ascending.

(2) The Ministry may, if an inspector is of opinion that special circumstances subsist at any mine, by notice served on the manager thereof exempt any such winding apparatus thereat from the requirements of this regulation.

Winding and haulage ropes

15.—(1) No spliced rope shall be used for winding or haulage in a shaft, staple-pit or unwalkable outlet in which persons are raised or lowered:

Provided that nothing in this paragraph shall prevent the use of an endless rope in an unwalkable outlet.

(2) No rope shall be so used for more than, in the case of a rope used in a shaft or staple-pit, three and a half years, or, in the case of a rope used in an unwalkable outlet, two and a half years:

Provided that if an inspector, having regard to the condition of the rope and to the extent to which and the circumstances in which it has been used, is satisfied that it can be used for such winding or haulage for a further period without danger, the Ministry may by notice served on the manager of the mine authorise such use of that rope for a further period.

(3) No rope installed after the commencement of the Act shall be so used unless it is of a type which has been found to withstand a load of at least six and a half times the maximum static load which may ordinarily be suspended on that rope where a cage is raised or lowered:

Provided that the Ministry may by notice served on the manager of a mine exempt any such rope thereat from the provisions of this paragraph.

Maintenance of shafts, staple-pits and unwalkable outlets and of winding and haulage apparatus used therein

16. At every mine a competent person appointed for that purpose by the manager shall at intervals not exceeding seven days, or, in the case of a shaft or staple-pit in the course of being sunk, or of an unwalkable outlet in the course of being driven, twenty-four hours, examine thoroughly the state of every part of any shaft, staple-pit and unwalkable outlet through any part of which persons are carried, and shall forthwith make and sign in a book provided for the purpose by the owner of the mine a full and accurate report of the result of the examination:

Provided that the Ministry may by notice served on the manager of the mine exempt any part of a shaft, staple-pit or unwalkable outlet thereat from the provisions of this regulation.

17.—(1) Without prejudice to the generality of regulations 8 and 9 of the Coal and Other Mines (Mechanics and Electricians) Regulations (Northern Ireland) 1970(d) it shall be the duty of the manager of every mine to ensure that a scheme for the systematic examination of plant at that mine made in pursuance of the said regulation 9 provides for the matters specified in the following paragraphs of this regulation.

(2) Provision shall be so made for the thorough examination at intervals not exceeding twenty-four hours of the external parts of any winding or haulage apparatus (including any apparatus ancillary thereto) which is in use for carrying persons through any shaft, staple-pit or unwalkable outlet.

(d) S.R. & O. (N.I.) 1970, No. 139.

(3) Provision shall be so made for the examination at intervals not exceeding thirty days of every rope used for carrying persons or loads through a shaft, staple-pit or unwalkable outlet, in the course of which examination the rope is to be thoroughly cleaned at all places particularly liable to deterioration and at other places not more than three hundred feet apart throughout its length, and at each of these places after cleaning examination is to be made of the circumference and surface condition of the rope and for any fractures of the wires.

(4) Where an automatic contrivance to prevent overwinding is provided in pursuance of regulation 9 of these regulations, provision shall be so made for testing the operation thereof—

- (a) at intervals not exceeding seven days by raising each cage or carriage so that it passes the point at which the contrivance comes into operation above the highest landing or beyond the point at which the outlet reaches the surface;
- (b) at intervals not exceeding three months by attempting to land each cage when descending at an excessive speed.

For the purposes of sub-paragraph (b), the automatic contrivance may be so adjusted as to control the speed of descent at a point other than the lowest entrance to, or the bottom of, the shaft or outlet.

(5) Provision shall be so made for the thorough examination of all apparatus (including any detaching hook) provided for attaching to the rope a cage, carriage or kibble ordinarily used in a shaft, staple-pit or unwalkable outlet—

- (a) forthwith after overwinding has caused any detaching gear, or, in the case of a cage which is raised and lowered by means of the friction of a rope on a winding sheave, any braking appliance fitted in the head-frame or sump of the shaft, to operate; and
 - (b) in any case at intervals not exceeding six months.
- (6) Provision shall be so made for any apparatus so used—
- (a) in the case of any apparatus or part thereof made of steel of a type for the time being approved by the Ministry for use in a particular manner, to be subjected to such heat treatment (if any) as may be specified in the notice of approval in relation thereto and if any such treatment is so specified at intervals not exceeding the intervals so specified; or
 - (b) in any other case, to be subjected to annealing or other appropriate heat treatment at intervals not exceeding six months:

Provided that the Ministry may on an application made to it in that behalf, by notice served on the manager of the mine, exempt any such apparatus or part thereof from the requirements of sub-paragraph (b) if an inspector is of the opinion, having regard to the material of which such apparatus or part thereof is made, the method of construction thereof or the manner in which it is used, that it is unnecessary or impracticable to require heat treatment in relation thereto.

(7) Provision shall be so made for the dismantling, cleaning and refitting of every detaching hook so used at intervals not exceeding three months.

(8) Where the efficient operation of any such detaching hook would be affected by wear of any ancillary plate or bell, provision shall be so made for the measurement of the relevant dimensions by means of calipers or gauges at intervals not exceeding thirty days.

PART III

DUTIES OF PERSONS OPERATING WINDING APPARATUS AND ROPE HAULAGE APPARATUS IN SHAFTS, STAPLE-PITS AND UNWALKABLE OUTLETS

18. A person operating any winding apparatus or rope haulage apparatus which is used for carrying persons through a shaft, staple-pit or unwalkable outlet shall not leave the controlling gear when the apparatus is in motion or he has any cause to believe that anyone is in the cage, carriage or kibble.

19.—(1) Every person operating any such winding or rope haulage apparatus shall at least once during his shift carefully examine the external parts of the apparatus under his charge and any apparatus ancillary thereto, unless such an examination has been carried out during his shift by another person in pursuance of paragraph (2) of regulation 17 of these regulations.

(2) After any cessation of winding or haulage exceeding two hours the person operating any such winding or rope haulage apparatus shall, immediately before lowering or raising any person, run the cage, carriage or kibble at least once between the top of the shaft, staple-pit or outlet and the lowest entrance thereto for the time being in use or the bottom thereof in order to ascertain whether all the apparatus is in order.

(3) If during the course of any such examination or test or on any other occasion a person operating any such winding or rope haulage apparatus discovers any defect likely to affect the proper working of the apparatus, he shall not put the machinery in motion again until the defect has been reported to the manager, an under-manager or the official under whose direction he works and he has been instructed to operate the machinery by one of those persons.

20. Every person operating any such winding or rope haulage apparatus shall during his shift keep the apparatus under his charge cleaned and oiled, unless some other person is appointed so to do.

21. No person in charge of any winding apparatus or rope haulage apparatus with which a shaft, staple-pit or unwalkable outlet is provided shall allow it to be operated under his supervision (on an occasion to which subsection (1) of section 42 of the Act does not apply) by any person other than one authorised in writing by the manager so to do.

22. No person operating any such winding or rope haulage apparatus shall set the machinery in motion in pursuance of any signal transmitted to him which is indistinct or in pursuance of any series of signals which is or appears to him to be incomplete or inconsistent.

PART IV

HOURS OF EMPLOYMENT OF WINDING ENGINEMEN

23. A person appointed under section 42 of the Act may be employed at a mine for more than eight hours in any day on which his duties consist of or include the operation, when persons are carried by means thereof, of mechanically or gravity operated winding apparatus with which a shaft is provided in the circumstances and subject to the conditions specified in the three next following regulations. Such a person is in this Part of these regulations referred to as a "winding engineman".

24.—(1) Where winding is carried on at a shaft by a succession of shifts a winding engineman may, for the purpose of changing shifts, be employed on one day in the week for a period not exceeding sixteen hours, or for two shifts of eight hours each, provided that in either case—

- (a) an interval of not less than eight hours elapses between the termination of his employment in one shift and the commencement of his employment in the next;
- (b) the period of employment does not, on the average of any three consecutive weeks, exceed eight hours per working day.

(2) Where winding is carried on at a shaft by a succession of shifts and when on any day one of the winding enginemen is prevented from attending by illness, accident or other cause, a winding engineman may be employed for not more than twelve hours on that day, or may be employed on a system of eight-hour shifts with an interval of eight hours between each shift, provided that he shall not be so employed for more than six weeks consecutively in respect of the absence of such engineman.

(3) Where winding is carried on at a shaft by a succession of shifts, but the work during some period or periods of the day is much heavier than the work during other periods, and it is desirable in the interests of safety that the winding engineman employed during the period or periods of heavier work shall not be employed for so long a time as eight hours, then if such winding engineman is employed for any less time than eight hours during the day, a winding engineman employed during the other part of the day may be employed for a corresponding time in excess of the eight hours, but not exceeding ten hours in all.

(4) Where winding is carried on at a shaft by a succession of shifts, and the winding enginemen employed at that shaft have agreed, with the consent of the manager, to be absent in turn from the end of their shift on Saturday to the commencement of their shift on Monday, each of the winding enginemen may be employed for not more than sixteen hours both on Saturday and on Sunday in not more than two weeks in any three, or for alternate shifts of sixteen hours and twelve hours and twelve hours, or on a system of eight-hour shifts:

Provided that in any case an interval of not less than eight hours elapses between the termination of the employment in one shift and the commencement of employment in the next, and provided that notice of this arrangement is affixed by the manager in the winding engine house.

25.—(1) Where at any shaft one shift only of persons descends and ascends the shaft during the day, and mineral is not wound before the descent or after the ascent of that shift, a winding engineman may be employed for not more than ten and a half hours on any day at that shaft.

(2) In any mine where only two shifts of workmen are employed below ground during a day, the one a mineral-getting shift and the other a repairing shift, and mineral is not wound or got except during the hours of the mineral-getting shift, and the total output of any such mine does not exceed on the average one hundred tons of mineral per working day, a winding engineman may be employed for a period not exceeding nine hours.

(3) Where at times when no shift of men is at work in the mine it is necessary for a person to descend the mine, and a person not otherwise employed to operate the winding apparatus is employed to lower and raise

such person, the person so employed may be employed for more than eight hours but not for more than twelve hours in any day.

26. In the event of any accident to the winding apparatus or other accident interfering with the lowering or raising of workmen, or in the event of any emergency requiring the continuous attendance of a winding engineman at the engine in the interests of the safety of the men in or about the mine, a winding engineman may continue to be employed after the end of his shift unless and until another winding engineman regularly employed at the same shaft is available to take his place.

27.—(1) It shall be the duty of the manager of every mine to fix within the limits allowed by the Act and this Part of these regulations and to specify in a notice posted in the engine room the period of employment for each day of the week of the winding enginemen or the winding engineman for each shift as the case may be.

(2) If any period of employment exceeding eight hours in any day is fixed in pursuance of any of the preceding provisions of this Part of these regulations, reference to that provision shall be included in the notice in relation to that period of employment.

28. Every winding engineman shall on each day on which he is so employed enter in a book provided by the owner for the purpose and kept in the engine room the times at which he began and ended his employment on each shift and if he is so employed for more than eight hours in any day by virtue of the provisions of paragraph (2) of regulation 24 or of regulation 26, he shall enter in the book particulars of the circumstances in which he was so employed.

PART V

PROVISIONS RELATING TO CARRIAGE OF PERSONS AND THINGS THROUGH SHAFTS

Banksmen and onsetters

29.—(1) At every mine where persons are carried through a shaft the manager shall make and secure the efficient carrying out of arrangements whereby a competent person appointed by him for the purpose (hereinafter referred to as a "banksman") is in attendance for the purpose of receiving and transmitting signals at the landing in use at the top of the shaft—

- (a) whenever any person is about to be lowered through that shaft; and
- (b) whenever any person who is to be raised through that shaft is below ground.

(2) At every mine where persons are carried through a shaft the manager shall make and secure the efficient carrying out of arrangements whereby whenever any person who is to be raised through that shaft is below ground a competent person appointed by him for the purpose (hereinafter referred to as an "onsetter") is in attendance for the purpose of receiving and transmitting signals at the entrance to that shaft from which any such person is to be raised.

(3) Nothing in the last preceding paragraph shall require an onsetter to be in attendance at an entrance to any shaft when all the persons below ground who are to be raised through that shaft from that entrance are officials of the mine or persons authorised in writing by the manager to give signals.

Procedure when persons are to be lowered

30.—(1) No banksman shall allow any person who is to be lowered from the top of a shaft to enter a cage for that purpose—

- (a) unless he has transmitted to the person operating the winding apparatus and to the person defined in paragraph (4) hereof (if any) the signal 3; and
- (b) unless he has received from the person so defined (if any) the signal 3.

(2) The banksman shall not transmit to the person operating the winding apparatus the signal to lower when any person is in the cage until he has received from the person defined in paragraph (4) hereof (if any) the signal 1.

(3) In order to direct the person operating the winding apparatus to lower a cage from the landing in use at the top of the shaft when any person is therein the banksman shall transmit to him the signal . . . 2.

- (4) The person hereinbefore referred to is—
 - (a) if two cages are lowered and raised by means of the same winding apparatus and the second cage is resting at another entrance to the shaft, the onsetter or other person authorised to transmit signals in attendance at that entrance; or
 - (b) if one cage only is lowered and raised by means of the winding apparatus, the onsetter or other person authorised to transmit signals in attendance at the entrance to the shaft to which the cage is to be lowered.

Procedure when persons are to be raised

31.—(1) No onsetter or other person authorised to transmit signals shall allow any person who is to be raised to the top of a shaft to enter a cage for that purpose—

- (a) unless he has transmitted to the banksman the signal . . . 3; and
- (b) unless he has received from the banksman the signal . . . 3.

(2) In order to direct the person operating the winding apparatus to raise a cage when any person is therein the onsetter or other person authorised to transmit signals shall transmit to him the signal 1.

(3) The person operating the winding apparatus shall not raise a cage in pursuance of a signal 1 given under the last preceding paragraph until he has received from the banksman the signal 2.

Signal to stop cage in motion when persons are carried

32. When the cage is in motion and any person is therein the person operating the winding apparatus shall stop the cage upon receiving the signal 1.

Signals when persons are not carried

33. In a shaft when persons are not being carried the following signals and no other shall be transmitted to require the movements specified in relation thereto that is to say—

- to raise up 1
- to lower down 2
- to stop when in motion 1
- to raise steadily 4
- to lower steadily 5.

Further signals

34.—(1) In relation to a shaft to which there is more than one entrance below ground, the manager shall determine the signals to be transmitted to indicate to which entrance a cage is to be sent.

(2) In relation to any shaft, the manager may determine the signal to be transmitted to give any indication (other than one for which a signal is specified in these regulations) and no person shall transmit any signal which is not so specified or determined.

35.—(1) The means provided for the transmission of the signals required by this Part of these regulations shall be such that any signal transmitted from an entrance to a shaft underground shall be transmitted simultaneously to the person operating the winding apparatus and to the banksman.

(2) There shall be provided and so placed as to be readily seen by the person operating any winding apparatus an appliance giving visual indication of every signal transmitted to that person in pursuance of the provisions of this Part of these regulations and retaining that indication until a cage is next raised or lowered.

36. No person, other than the banksman, an onsetter, an official of the mine or a person authorised in writing by the manager to transmit such signals, shall transmit any signal in any shaft.

37. There shall be kept posted at each entrance for the time being in use to every shaft, and in the place at which is operated the winding apparatus provided therefor, a notice of the signals specified in these regulations and any signals determined by the manager for transmission in that shaft.

PART VI

PROVISIONS RELATING TO THE CARRIAGE OF PERSONS
AND THINGS THROUGH STAPLE-PITS

38. (a) There shall be provided and maintained in connection with every staple-pit provided with winding apparatus in a mine being a staple-pit in the case of which the distance between the highest and lowest entrance thereto for the time being in use exceeds fifty feet, effective means of transmitting audible and visible signals from each entrance to the staple-pit for the time being in use to the place at which the winding apparatus is operated; and

(b) the provisions of Part V of these regulations shall (save as hereinafter expressly provided) apply in relation to a staple-pit as they apply in relation to a shaft:

39. Where it appears to the manager of a mine that the provisions of regulation 29 (which relates to banksmen and onsetters) are inappropriate in relation to any staple-pit he may with the consent of the Ministry elect to make and secure the carrying out of arrangements in pursuance of the next following regulation; and where a manager has duly elected as aforesaid, the said regulation 29 and regulations 30 and 31 (which relate to procedure where persons are raised or lowered) shall not apply in relation to that staple-pit.

Travelling onsetters

40. Where a manager of a mine has so elected he shall make and secure the efficient carrying out of arrangements whereby a competent person appointed by him for the purpose (hereinafter referred to as a "travelling onsetter") is in the cage, when any person is to be or is being carried therein, for the purpose of transmitting signals to the person operating the winding apparatus.

Procedure when persons are lowered

41.—(1) No travelling onsetter shall allow any person who is to be lowered from the top of the staple-pit to enter a cage for that purpose unless he has transmitted to the person operating the winding apparatus the signal 3.

(2) In order to direct the person operating the winding apparatus to lower a cage from the landing in use at the top of the staple-pit when any person is therein the travelling onsetter shall transmit to him the signal 2.

Procedure when persons are raised

42.—(1) No travelling onsetter shall allow any person who is to be raised to the top of the staple-pit to enter a cage for that purpose unless he has transmitted to the person operating the winding apparatus the signal . . . 3 and has received from that person the signal 3.

(2) In order to direct the person operating the winding apparatus to raise the cage when any person is therein the travelling onsetter shall transmit to him the signal 1.

43. Paragraph (1) of regulation 35 shall not apply in any case in which signals are transmitted by a travelling onsetter.

PART VII

SIGNALLING IN ROADS AND UNWALKABLE OUTLETS

Signalling in roads

44.—(1) In roads in which signalling apparatus is provided the following signals and no other shall be transmitted thereby to require such movement in such cases as are specified in relation thereto, that is to say—

(a) in the case of mechanically operated rope haulage apparatus used for direct or main rope haulage—

- to stop 1
- to lower 2
- to raise up 3;

(b) in the case of mechanically operated rope haulage apparatus used for main and tail rope haulage—

- to stop 1
- to haul inbye 2
- to haul outbye 3
- to slack out tail rope 4
- to tighten tail rope 5
- to slack out main rope 6
- to tighten main rope 7;

(c) in the case of gravity operated rope haulage apparatus (except where an endless rope is used)—

- to stop 1
- to lower 2;

(d) in the case of endless rope haulage—

- to stop 1
- to commence hauling 2;

(e) in the case of a conveyor—

- to stop 1
- to start 2.

(2) In any case in which persons are to be carried in vehicles moved by means of any apparatus specified in the last preceding paragraph any signal so specified requiring the vehicles to be moved shall be preceded by the signal 8.

(3) No person shall pass on foot along any part of a road in which signalling apparatus is provided and in which vehicles can be moved by means of gravity operated rope haulage apparatus (not having an endless rope) while a person authorised by the manager to transmit signals by means of that signalling apparatus is on duty thereat unless that person has transmitted the signal 4 and that signal has been acknowledged by the signal 4.

45. In relation to any road the manager may determine the signal to be transmitted to give any indication, and in particular to indicate the place from which any signal is transmitted (other than an indication for which a signal is specified in these regulations), and no person shall transmit any signal which is not so specified or determined.

Signalling in unwalkable outlets

46. In relation to any unwalkable outlet the manager of a mine—

- (a) shall determine the signal to be transmitted to require any movement therein; and
- (b) may determine the signal to be transmitted to give any other indication, and in particular to indicate the place from which any signal is transmitted, and no person shall, except in a case of emergency, transmit any signal which is not so determined.

Notices

47. Where vehicles are moved through an unwalkable outlet or road by means of mechanically operated or gravity operated rope haulage apparatus, there shall be kept posted, at the place at which that apparatus is operated and at suitable points on each unwalkable outlet or road through which vehicles can be so moved, a notice of the signals specified in these regulations and any signals determined by the manager for transmission in that outlet or road.

Prohibition of unauthorised signals

48. Except in a case of emergency no person other than an official of the mine or a person authorised by the manager to transmit such signals shall transmit any signal by means of any signalling apparatus provided in any unwalkable outlet or road.

PART VIII

FURTHER PROVISIONS RELATING TO CARRIAGE OF PERSONS AND THINGS
THROUGH SHAFTS, STAPLE-PITS AND UNWALKABLE OUTLETS

49.—(1) No minerals, equipment or materials (other than things which are required to be or are normally kept by a person in his possession) shall be carried through a shaft, staple-pit or unwalkable outlet whilst persons are being carried through it, whether in the same direction or not.

(2) Nothing in paragraph (1) of this regulation shall prevent—

(a) persons who are to work in a shaft, staple-pit or outlet having with them when being carried therethrough equipment or materials which they will or may require for the purposes of that work; or

(b) persons accompanying bulky materials that cannot be raised or lowered in a cage.

(3) Where a shaft, staple-pit or unwalkable outlet is divided throughout by a substantial partition, each compartment shall for the purposes of this regulation be deemed to be a separate shaft, staple-pit or outlet, as the case may be.

(4) It shall be the duty of persons authorised by these regulations or by the manager to transmit signals in relation to the operation of the relevant winding or haulage apparatus to ensure compliance with the provisions of paragraph (1) of this regulation.

50.—(1) The manager of every mine shall, in relation to each shaft, staple-pit and unwalkable outlet through which persons are carried, determine the maximum number of persons who may be carried at any one time in any cage or carriage therein and where a cage or carriage has more than one deck, on each deck thereof or, in the case of a shaft or staple-pit in the course of being sunk in any kibble.

(2) There shall be kept posted at each entrance for the time being in use to each such shaft, staple-pit or unwalkable outlet a notice specifying every number so determined.

(3) It shall be the duty of persons authorised by these regulations or by the manager to transmit signals in relation to the operation of the relevant winding or haulage apparatus to ensure that no person in excess of the number so determined enters any cage or carriage or any deck thereof or, in the case of a shaft or staple-pit in the course of being sunk, any kibble.

51. Where an automatic contrivance to prevent overwinding is provided in pursuance of regulation 9 at any shaft or unwalkable outlet (not being a contrivance which is in full and fixed engagement with the engine) it shall be the duty of any person authorised by these regulations or by the manager to transmit signals in relation to the operation of the relevant winding or haulage apparatus to ensure that, unless he has taken steps to be assured that the contrivance is engaged, no person is permitted to enter a cage or carriage therein.

52. Where persons are to be carried in a cage or carriage provided with gates through a shaft, staple-pit or unwalkable outlet the banksman, onsetter, travelling onsetter or other person authorised to transmit signals shall not signal the cage or carriage away until the gates are properly closed.

53.—(1) The onsetter or other person authorised to transmit signals at any entrance below ground to a shaft, staple-pit or unwalkable outlet shall not begin, or allow any assistant or other person to begin, to remove or open any enclosure or barrier provided at that entrance unless a cage or carriage is stationary at that entrance or has reached such a position that the floor or a deck thereof will be stationary opposite that entrance by the time the enclosure or barrier is removed or opened.

(2) The onsetter or other person authorised to transmit signals at any entrance below ground to a shaft, staple-pit or unwalkable outlet shall replace or close any enclosure or barrier provided at that entrance (other than one operated by the cage or carriage) either before or immediately after he has signalled away therefrom a cage or carriage.

54. Where persons are to be raised through a shaft, staple-pit or unwalkable outlet from the lowest entrance thereto in a cage or carriage having more than one deck, the onsetter, travelling onsetter or other person authorised to transmit signals shall secure that the top deck is loaded first:

Provided that this regulation shall not apply in any case in which a balanced platform is used or the decks are loaded simultaneously.

PART IX

PROVISIONS FOR SECURING SAFETY IN TRANSPORT ROADS

Travelling in transport roads

55. Nothing in paragraph (a) of subsection (1) of section 39 of the Act shall prohibit a person passing on foot along a length of road during a period during which vehicles are moving therein if there is a continuous clear space not less than two feet in width between the vehicles and one side of the road and if the maximum speed at which vehicles may run therein does not exceed ten miles per hour.

Clearances at coupling places

56. At every place at which sets or trains consisting of three or more vehicles are coupled or uncoupled there shall be provided and maintained a continuous clear space not less than two feet in width between the vehicles standing on any rails thereat and the side of the road nearest to those rails:

Provided that this regulation shall not apply where there are two parallel lines of rails and there is a clear space not less than three feet in width between the vehicles standing on those lines.

Refuge holes

57.—(1) For the purposes of section 40 of the Act, the intervals which must not be exceeded between refuge holes in roads in which run vehicles moved by gravity or by mechanical power (other than locomotives) shall be—

- (a) in the case of a length of road in which the gradient does not exceed 1:20 and in which either there is a continuous clear space not less than two feet in width between the vehicles and one side of the road or the maximum speed of the vehicles must not exceed three miles per hour, sixty feet; or
- (b) in any other case, thirty feet.

(2) For the said purposes the intervals which must not be exceeded between refuge holes in any length of road in which a locomotive runs shall be—

(a) in a part of the road in which there is no gradient but which curves and with respect to which the radius of the curve measured to the centre of that part of that road—

(i) does not exceed one hundred feet—sixty feet;

(ii) exceeds one hundred feet but does not exceed two hundred feet—ninety feet;

(iii) exceeds two hundred feet but does not exceed three hundred feet—one hundred and fifty feet;

(b) in a part of the road which does not curve but in which there is a gradient which—

(i) does not exceed 1:80—three hundred feet;

(ii) exceeds 1:80 but does not exceed 1:50—one hundred and eighty feet;

(iii) exceeds 1:50 but does not exceed 1:30—one hundred and twenty feet;

(iv) exceeds 1:30—sixty feet;

(c) in a part of the road which curves and in which there is a gradient, the intervals specified in sub-paragraph (a) of this paragraph in relation to a part of a road having a curve with a like radius (being in each case the radius measured as specified in that sub-paragraph) or the intervals specified in sub-paragraph (b) in relation to a part of a road in which there is a like gradient, whichever are the lesser;

(d) in any other part of the road—three hundred feet.

(3) For the said purposes, and without prejudice to the provisions of the last preceding paragraph, a refuge hole shall be provided at each end of every curved part of a road in which a locomotive runs.

(4) For the said purposes the prescribed dimensions of refuge holes are—

(a) in width, three feet as nearly as may be;

(b) in depth, not less than four feet; and

(c) in height, not less than the height of the road at that place or six feet whichever is the less.

(5) Where in any length of road there is a continuous clear space not less than two feet in width between the vehicles running therein and one side of the road, every refuge hole therein shall be on that side of the road.

(6) Where in any length of road such clear space is not provided any refuge holes in a part of the road which curves shall be on the outside of the curve and, so far as is consistent with that requirement, all the refuge holes therein shall be on the same side of the road.

(7) Every refuge hole shall be—

(a) marked with a distinctive number;

(b) if necessary to make it readily visible, constantly kept whitewashed both inside and for a distance of not less than one foot round the aperture; and

(c) kept clean.

Transport of persons

58.—(1) The manager of every mine in which trains are run for the conveyance of persons below ground shall ensure that each such train is accompanied by, and all persons therein are in the charge of, a competent person appointed by him.

(2) No person shall get on to or off such a train when it is moving or ride upon the footboard, buffer or coupling of any vehicle.

59. No person shall ride on a set or train of vehicles moved by mechanically operated or gravity operated rope haulage apparatus for the purpose of detaching vehicles from, or attaching them to, the rope if that set or train is moving at a speed exceeding three miles per hour.

60. No person shall ride on any haulage rope.

Movement of vehicles by hand

61.—(1) No person when moving a vehicle by hand down a gradient exceeding 1:12 shall go down in front of the vehicle.

(2) No person shall move any vehicle by hand down an incline in circumstances in which he cannot by his own strength control it from behind unless there is provided such a contrivance as to enable him to control it from behind.

Apparatus to prevent accidents from runaway vehicles

62.—(1) A sufficient supply of suitable sprags, lockers or drags shall be provided, maintained and used for the purpose of holding vehicles—

- (a) at the top of every incline on which vehicles are moved by gravity operated rope haulage apparatus; and
- (b) at every place at which sets or trains consisting of three or more vehicles are coupled or uncoupled.

(2) Stop blocks or other similar contrivances shall be provided and maintained—

- (a) at the top of every incline on which vehicles are moved by gravity operated rope haulage apparatus (not being such apparatus with an endless rope); and
- (b) at every entrance to such an incline by which vehicles are brought on to the incline.

(3) In relation to every train by which persons are carried and which is moved by mechanically operated rope haulage apparatus (not being such apparatus with an endless rope) upon any length of road having a gradient exceeding 1:12 there shall be provided and maintained means of preventing any vehicle forming part of that train from becoming disconnected accidentally from other vehicles in the train.

(4) Nothing in this regulation shall be so construed as to affect the generality of section 41 of the Act.

PART X**CAPPINGS OF WINDING AND HAULAGE ROPES**

63.—(1) No capped rope shall be used at any time in winding or haulage apparatus unless the capping has been made within a period of six months immediately preceding that time.

(2). No capped rope shall be so used unless the capping is of a type which has been found to withstand a load of—

- (a) in the case of a rope used in winding apparatus, at least seven times the maximum static load which may ordinarily be borne by that capping where a cage is raised or lowered;
- (b) in the case of a rope used in haulage apparatus for carrying persons through an outlet, at least seven times the maximum static load which may ordinarily be borne by that capping;
- (c) in the case of a rope used in any other haulage apparatus, at least sixty per cent. of the breaking strength of rope of that type.

64. No capped rope shall be used in any haulage apparatus by means of which persons are carried or in any winding apparatus unless, when the capping was made, the work was superintended by a competent person appointed for that purpose by the manager of the mine.

65.—(1) No rope which has been re-capped shall be used in any haulage apparatus by means of which persons are carried or in any winding apparatus unless on the last occasion on which it was re-capped a part of the rope including the capping not less than six feet in length was cut off: so however that if at the date of any re-capping the preceding capping or re-capping was done not more than three, four or five months previously the part to be cut off need not exceed three, four or five feet respectively.

(2) Any length of rope cut off in pursuance of this regulation shall forthwith be opened up and its internal condition examined by a competent person appointed for the purpose by the manager of the mine, and the person making such an examination shall forthwith make and sign in a book provided for the purpose by the owner of the mine, a full and accurate report of the result thereof.

66. No rope having a capping containing white metal shall be used in any winding or haulage apparatus unless—

- (a) the capping was made with white metal of which the melting point is not higher than 570° Fahr. or 299° Cent., and the temperature of which when poured into the socket of the capel did not exceed 685° Fahr. or 363° Cent.;
- (b) in the length of rope which lies within the tapered part of the socket any fibre core was cut out when the capping was made and the wires were then untwisted and thoroughly cleaned; and
- (c) the temperature of the socket of the capel was—
 - (i) in the case of a capel made of steel of a type for the time being approved by the Ministry for the purposes of this sub-paragraph, between 212° and 400° Fahrenheit or between 100° and 203° Centigrade;
 - (ii) in any other case as nearly as might be 212° Fahrenheit or 100° Centigrade immediately before the white metal was poured into it.

67. No rope with a form of capping in which the wires at the end of the rope are bent back on the rope itself to form a cone shall be used in any haulage apparatus by means of which persons are carried or in any winding apparatus, unless—

- (a) wedges formed by lapping with soft iron wire are placed between the rope and the wires which are bent back; and
- (b) the length of the tapered portion of the socket of the capping is not less than eight times the diameter of the rope.

68. No round rope to which a capel is attached by rivets passing through the rope shall be used in any haulage apparatus by means of which persons are carried or in any winding apparatus.

PART XI

ADDITIONAL PROVISIONS RELATING TO SHAFTS AND STAPLE-PITS
IN THE COURSE OF BEING SUNK

69.—(1) Without prejudice to the generality of regulations 8 and 9 of the Coal and Other Mines (Mechanics and Electricians) Regulations (Northern Ireland) 1970, it shall be the duty of the manager of every mine consisting of or comprising a shaft or staple-pit in the course of being sunk to ensure that a scheme for the systematic examination of plant at that mine made in pursuance of the said regulation 9 provides for the thorough examination at intervals not exceeding twenty-four hours of all gear by which any cradle, platform or other thing is suspended in that shaft or staple-pit.

(2) Where walling or tubbing is being carried out in a shaft or staple-pit in the course of being sunk, the manager shall make and ensure the efficient carrying out of arrangements to secure that it is thoroughly examined by a competent person appointed by him immediately before or during each shift in which work is carried out thereon, whether in the course of an inspection required by regulations or otherwise.

70.—(1) Any place where a person could fall off any cradle or platform on which he works in a shaft or staple-pit in the course of being sunk shall be protected by fencing or otherwise to prevent him doing so.

(2) While any person is at work on any such cradle or platform it shall be secured to the side of the shaft or staple-pit to prevent it swinging and shall not be moved except upon the direction of the deputy for that shift or an official of the mine superior to the deputy.

(3) While any person is at work on any such cradle or platform which is constructed of two or more parts hinged together, those parts shall be securely bolted together.

71. At any shaft or staple-pit in the course of being sunk it shall be the duty of the banksman to ensure that the top of the shaft or staple-pit and any landing thereat is kept free of mineral or any other thing which might fall into that shaft or staple-pit and cause injury.

72. No engine which is not fixed shall be used for raising or lowering any person or thing in a shaft or staple-pit in the course of being sunk.

73.—(1) In a shaft or staple-pit in the course of being sunk the provisions of regulations 30 to 37 of these regulations shall not apply in relation to the determination or transmission of signals, but the following signals and no other shall be used for the purposes specified in relation thereto, that is to say—

to raise up	1
to lower down	2
to stop when in motion	1
when men are to be raised or lowered the person transmitting the signal shall transmit a preliminary signal of	3.

(2) In relation to any shaft or staple-pit in the course of being sunk the manager may determine a signal to be transmitted to give any indication (other than one for which a signal is specified in this regulation) and no person shall transmit any signal which is not so specified or determined.

(3) No person other than the banksman, an official of the mine or a person authorised in writing by the manager to transmit such signals shall transmit any signal in any shaft or staple-pit in the course of being sunk.

74.—(1) When anything is to be raised or lowered in any kibble through any shaft or staple-pit in the course of being sunk, it shall be the duty of the deputy for that shift or the banksman or other person authorised to transmit signals in relation thereto, as the case may be, to ensure that it is properly loaded and in particular that—

- (a) no mineral projects above the rim;
- (b) tools, equipment or other materials for use or used in the mine are not loaded together with mineral;
- (c) when things which project above the rim are carried, they are securely fastened to the bow or chains supporting the kibble;
- (d) nothing capable of causing injury is adhering to the outside of the kibble;
- (e) when the kibble is being raised, it is in line with the pulleys and carefully steadied.

(2) When anything is to be lowered otherwise than in a kibble through a shaft or staple-pit in the course of being sunk, it shall be the duty of the banksman or other person authorised to transmit signals in relation thereto to ensure that it is safely slung.

75. No person shall ride on the edge of a kibble when being raised or lowered thereby.

76. The person operating any winding apparatus at a shaft or staple-pit in the course of being sunk—

- (a) when lowering the kibble, shall stop it eighteen feet above the point to which it is being lowered and shall not lower it further until he has received another signal to lower down;
- (b) when raising the kibble, shall stop it four feet above the point from which it is being raised and shall not raise it further until he has received another signal to raise up.

77. If a shaft or staple-pit is being sunk through any rock or stratum containing or likely to contain water (whether dispersed or in natural cavities) there shall be provided and maintained as a means of escape from the bottom of the shaft or staple-pit to the surface or to some other place of safety, in any case in which more than ten persons are employed below ground at any one time, at least four ladders and, in any other case, at least two ladders.

PART XII

MISCELLANEOUS PROVISIONS

Provision of means of telephonic communication

78.—(1) Where in any mine vehicles can be moved by means of rope haulage apparatus or locomotives from a point at or near an entrance to a shaft or unwalkable outlet along a road for a distance exceeding three thousand feet, effective means of telephonic communication shall be provided and maintained between the furthest point inbye to which vehicles can be so moved, that entrance to the shaft or outlet and a point above ground.

(2) Nothing in this regulation shall apply to a mine at which not more than thirty persons are employed below ground.

Prevention of injuries through things falling down shafts or staple-pits

79. There shall be provided in every shaft and staple-pit reasonable protection for the purpose of preventing persons loading cages at entrances thereto being injured by articles falling down it.

80.—(1) No person shall go into or across any uncovered space at the bottom of a shaft or staple-pit except for the purpose of working there.

(2) The manager of every mine shall ensure that no person is at work in any uncovered space at the bottom of a shaft or staple-pit (not being a shaft or staple-pit in the course of being sunk) at any time at which any cage is in motion therein.

Assignment of duties to competent persons

81. It shall be the duty of the manager to make and ensure the efficient carrying out of arrangements to secure that every inspection, examination or other thing required by these regulations to be carried out or done by a competent person appointed by him is assigned to a competent person so appointed.

Application of certain regulations to staple-pits

82.—(1) The provisions of these regulations specified in the next following paragraph shall apply in relation to a staple-pit in a mine as they apply in relation to a shaft or unwalkable outlet.

(2) Regulation 9 (which relates to overwinding), regulation 10 (which relates to the construction of cages and ancillary apparatus), regulation 13 (which relates to keps), regulation 14 (which relates to detaching gear) and regulation 51 (which relates to the prevention of overwinding):

Provided that the said regulation 13 shall not apply to any staple-pit in relation to which the manager of a mine has appointed a travelling onsetter in pursuance of regulation 40.

Sealed with the Official Seal of the Ministry of Commerce for Northern Ireland this 1st day of June 1970 in the presence of

(L.S.)

J. H. Armstrong,
Assistant Secretary.

EXPLANATORY NOTE

(This note is not part of the regulations but is intended to indicate their general purport.)

These regulations, which apply to mines of coal, stratified ironstone, shale and fireclay, make provision with regard to winding and haulage apparatus in shafts, staple-pits and unwalkable outlets; the duties of persons operating winding apparatus and rope haulage apparatus in shafts and outlets; the hours of employment of winding enginemen; the carriage of persons and things through shafts, staple-pits and outlets; signalling in shafts, outlets and roads; the securing of safety in transport roads; and cappings of winding and haulage ropes. There are additional provisions relating to shafts and staple-pits in the course of being sunk and other miscellaneous provisions with regard to safety in shafts, staple-pits and roads.