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THE RAILWAYS (LEVEL CROSSING) REGULATIONS, 2018

ARRANGEMENT OF REGULATIONS

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- at the same level;
- “public level crossing” means a level crossing whose road is a public road;
- “register” means a register of level crossings maintained in accordance with regulation 5;
- “running line” means the railway line which is used for the passage of trains;
- “shunting” means a movement of a train or rail vehicle from one line of rail to another for the purpose of forming a train, loading, offloading or placing a vehicle on sick line for repairs;
- “siding” means a railway line serving railway oriented industries from the main line and does not include a branch line;
- “sightlines” means lines connecting train and road vehicle at a distance of 100 metres from the center of a level crossing;
- “train” means a locomotive with a vehicle attached or a light locomotive or motor trolleys which is designated as a train.

PART II

REGULATION OF LEVEL CROSSING

- Classification of level crossings **3.** Level crossings shall be classified in accordance with the First Schedule to these Regulations.
- Construction of level crossing **4.**-(1) Level crossings shall be constructed on railway lines designed for operation at train speed less than 80 kilometers per hour.
(2) All road-rail intersections with a train speed equal to or exceeding 80 kilometers per hour shall be by over or under pass.
- Register of level crossings **5.**-(1) The Corporation shall keep and maintain a Register of all level crossings and shall, upon request, avail the Register for inspection by the Regulator.
(2) The Corporation shall record in the Register the kilometrage, class, type of level crossing and the party with whom an agreement, if any, has been concluded.
(3) The Corporation shall close and strike off the Register which is no longer required.

Apportionment of costs	<p>6.-(1) Where a new railway crosses an existing road, public or private, or severs land in such manner that in order to pass from one severed part of the land to the other a level crossing, or bridge is required, the cost of providing level crossing and maintaining it shall be borne by the Corporation.</p> <p>(2) Where a level crossing is required across an existing railway, the cost of construction shall be borne by a party requiring the crossing and the cost of maintenance is apportioned as provided in the agreement relating to the crossing.</p>
Responsibilities of parties	<p>7.-(1) The Corporation shall be responsible for:</p> <ul style="list-style-type: none">(a) the part of the road surface of the level crossing that lies between the rails of each track, the part that lies outside the rails, up to the ends of the railway sleepers, and the elevation of the railway tracks in relation to the road;(b) sightlines;(c) drainage along the railway right of way;(d) railway crossing signs; and(e) level crossing warning systems. <p>(2) With respect to public level crossings, the road authority is responsible for:</p> <ul style="list-style-type: none">(a) the road approaches and those parts of the surface of the road up to the ends of the railway sleepers, including the elevation of the road in relation to the railway track;(b) drainage along the road right of way; and(c) traffic control devices on road approaches and stop signs at level crossings, including devices that interconnect with level crossing warning systems. <p>(3) The responsibilities for a person who is delegated powers and functions under section 5 and 9 of the Act that relates to level crossing and a cattle crossing shall be prescribed in the agreement concluded between the Corporation and the person in accordance with the Act.</p>
Protection system	<p>8. Selection and implementation of the protection system for a level crossing shall take into consideration results of a safety assessment carried out under regulation 10, the general guidance given in the Second Schedule and</p>

availability of appropriate technology.

General specifications **9.** The standards of construction of a level crossing shall comply with the standards prescribed in the Third Schedule.

Safety assessment **10.**-(1) A person who intends to undertake the construction of a level crossing shall, upon payment of assessment costs, request the Corporation to conduct a detailed safety assessment prior to the commencement of construction.

(2) Subject to sub-regulation (1), the Corporation shall conduct a detailed safety assessment and take measures to obviate identified safety threats before undertaking or authorizing any of the following changes:

- (a) a significant change in the road or railway infrastructure, including a relocation of the level crossing, or in the traffic patterns at or in the vicinity of a level crossing;
- (b) anything that is likely to cause a significant increase in the traffic volume on the road or line of railway at or in the vicinity of a level crossing;
- (c) a significant change in the type of vehicles passing over the level crossing; or
- (d) any other action that might cause a significant change in road or railway operations that could adversely affect the safety of the level crossing.

(3) Without prejudice to sub regulation (2), a safety assessment shall be undertaken when the Corporation becomes aware of the occurrence of recurrent unsafe incidents on a level crossing.

(4) The Corporation shall, periodically, undertake a comprehensive safety assessment of all level crossings under its responsibility to coincide with the comprehensive review of its plan required under the Railways (Safety Management) Regulations, 2018.

(5) The Corporation shall, upon request, serve a person who intends to undertake the construction of a level crossing with a copy of the safety assessment report prepared under this regulation.

Visibility **11.** The requirements and standards to be met in

respect of sightlines for a level crossing are:

- (a) sightlines shall be provided and maintained in accordance with the requirements set out in the Third Schedule;
- (b) tree, bush or other obstacles that might, by obscuring clear vision of the road, the line of railway or traffic control devices, constitute a threat to safe operations shall be removed as soon as practicable; and
- (c) landowner is notified when the safety plan for the level crossing provides for sightlines over their property, including informing him as to the area of the property where the sightlines are located and actions to be taken.

Safety measures in vicinity of level crossing

12. Any person intending to undertake or authorise an activity on land in the vicinity of a level crossing or on the road or line of railway of the level crossing that might obscure clear vision between the road and the line of railway or the traffic control devices, shall, prior to the undertaking of the activity, consult with both rail and road authorities.

Vehicles with chained wheels using level crossing

13. A person shall not permit a machine with chained wheels to cross the railway without special approval of the Corporation, that shall ensure wood planks or steel plates are laid across the rails.

Inspection, testing and maintenance

14.-(1) The Corporation shall ensure that the components of its level crossing warning systems are tested in a manner prescribed in the Third Schedule.

(2) The Corporation shall establish and implement instructions in respect of the maintenance, testing and inspection of its level crossing warning systems to be followed by a person authorized by the Corporation.

(3) An authority responsible for roads shall establish and implement instructions in respect of the maintenance, testing, and inspection of its “prepare to stop at railway crossing” signs, traffic signal pre-emption systems and traffic signals installed at level crossings in lieu of level crossing warning systems to be followed by persons responsible for the maintenance, testing and inspection of the signs, systems and signals.

Accidents involving level crossing signal failure

15. The Corporation shall report to the Regulator every impact between on-track railroad equipment and any other moving vehicle involving activation failure within twenty four hours and a complete accident report shall be filed thereafter.

Level crossing signal system failure report

16.-(1) The Corporation shall, for each false activation of a level crossing warning system report to the Regulator within seven days from the date of malfunction.

(2) Upon receipt of a report of a warning system malfunction, the Corporation shall promptly investigate the report, determine the nature of the malfunction and adjust, repair or replace any faulty component without undue delay.

(3) Until the repair work is completed, the Corporation shall provide alternative means of warning road traffic and railway employees as shall be provided in railway operating instructions.

**PART III
OFFENCES AND PENALTIES**

Offences and penalties

17. Any person who fails to comply with any provision of these Regulations or otherwise obstructs or hinders the implementation of these Regulations commits an offence and is liable on conviction to a fine of not less than five million shillings and not exceeding ten million shillings or to imprisonment for a term not less than two years and exceeding five years or to both such fine and imprisonment.

Compound of offences

18.-(1) Notwithstanding the provisions of these Regulations relating to penalties, where a person admits in writing that he has committed an offence under these Regulations, the Director General or any other person authorised by him in writing may, at any time prior to the commencement of the proceedings by a court of competent jurisdiction compound such offence and order such person to pay sums of money, not exceeding one half of the amount of the fine to which such person would otherwise have been liable to pay if he had been convicted of such offence.

(2) Where an offence is compounded in accordance with subregulation (1) and proceedings are brought against the offender for the same offence, it shall be a good defence

for the offender to prove to the satisfaction of the court that the offence with which the offender is charged has been compounded under subregulation (1).

(3) Where the person fails to comply with the compounding order issued under this regulation within the prescribed period, the Corporation may-

- (a) in addition to the sum ordered, require the person to pay an interest at the rate prescribed in the regulations; and
- (b) enforce the compounding order in the same manner as a decree of a court for the payment of the amount stated in the order.

Railways (Level Crossing)

GN. No. 408 (Contd.)

FIRST SCHEDULE

(Made under regulation 3)

CLASSIFICATION OF LEVEL CROSSINGS

For purposes of fixing the characteristics and standard of construction, level crossings shall be classified as follows:

Class	Description
A	Situated within municipalities and with running trains.
B	Situated within municipalities and with only shunting over the tracks.
C	Situated on trunk and regional roads outside municipalities.
D	Situated in rural roads, both public and private.
E	Pedestrian level crossing.
F	Cattle crossing solely for the passage of livestock across the railway.

Livestock Crossing Points are not level crossings. They may be provided, where necessary, in unfenced grazing country in order to avoid damage to the track and formation. Such sites shall be selected for visibility. Collaboration with local government authorities shall be sought to ensure that livestock is driven across the railway only at such sites.

SECOND SCHEDULE

(Made under regulation 8)

A GUIDE TO THE SELECTION OF PROTECTION SYSTEMS FOR LEVEL CROSSINGS

1. Before deciding on the type of protective system for a level crossing, a safety assessment shall be undertaken which should take into consideration, among others, the following factors:

Frequency and speed of road traffic for the next five years, Frequency and speed of rail traffic for the same period, Visibility.

2. The following table offers a general guidance to the selection of protective system for different classes of level crossing.

Class of Level Crossing	High Risk Location	Low Risk Location
A (Municipal, Running Line)	(a) Automatic Barrier (b) Flashing Lights with Audible Warning Device	(a) Interlocked Barrier operated by Station Master (train dispatcher) (b) Flashing Light with Audible Warning Device
B (Municipal, Shunting Line)	(a) Interlocked Barrier operated by Station Foreman (train dispatcher) (b) Flashing Light with Audible Warning Device	(a) Gate or Barrier operated by employee appointed for the purpose (b) Hand Signals (Flag or Light) by employee
C (Trunk/ Regional Road)	(a) Barrier operated by employee stationed at the crossing (b) Hand Signals (Flag or Light) by employee	Rumble strip and Warning Signs
D (Rural Road)	Warning Signs	Warning Signs
E (Pedestrian)	Pedestrian Light Signal	-
F (Livestock)	-	-

3. Further to section 2, warning signs shall be erected at all level crossings as per section 4 of the Third Schedule.

4. In Class A, B and C half barrier systems (two quadrant system), where required median pegs shall be erected for a distance of 20 meters before the crossing to prevent cars from overtaking stopped cars.
5. Four quadrant barrier systems shall be provided with obstacle detection systems to prevent the stranding of vehicles between the barriers.

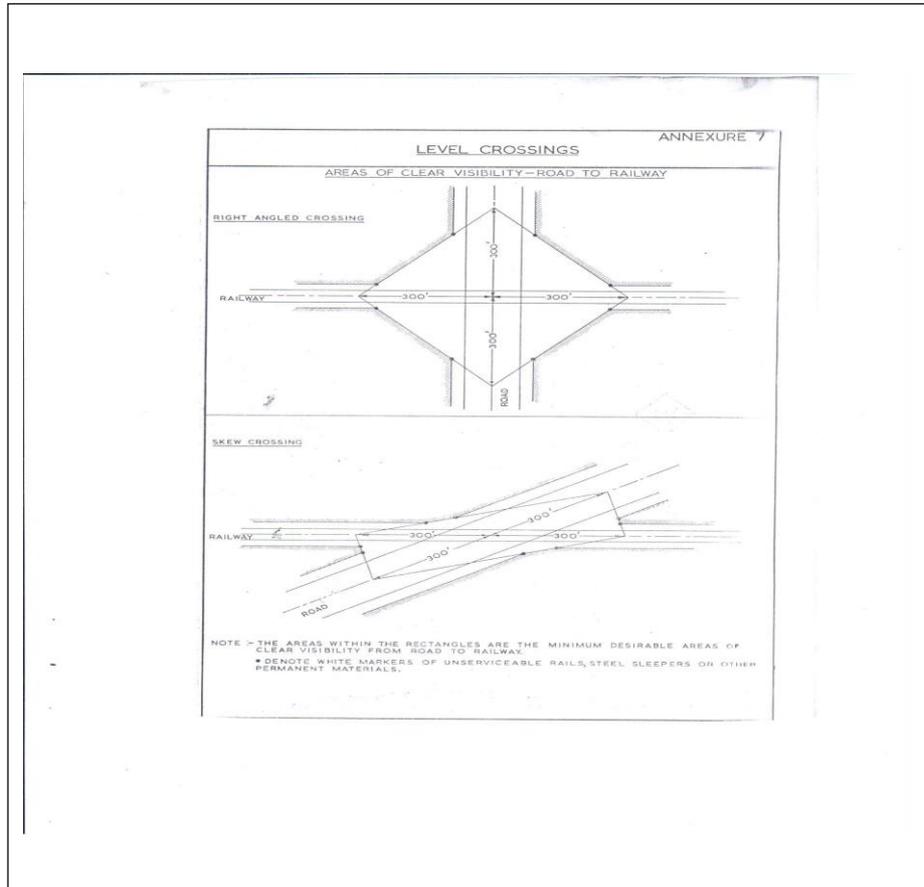
THIRD SCHEDULE

(Made under regulation 9, 11 and 14)

GENERAL SPECIFICATIONS OF LEVEL CROSSINGS

1. Visibility (Road to Railway)

(a) The minimum desirable area of clear visibility is contained within a rectangle (diamond shape) whose sides form the sightlines, the distance of the half diagonal being 100 meters at the minimum for a track speed of less than 80 km/hr and medium traffic density. (See diagram below)



For higher track speeds or faster road traffic, the sighting distance should be increased over 100 meters.

(b) The road should normally cross the railway at right angles except under special circumstances.

(c) There shall be a clear vision between the eyes of a motorist and rail level. Land adjoining the track should not be above rail level and the land adjoining the road not more than one meter above road level and with the intervening land not rising above a plane defined by these two levels.

(d) Vegetation and cultivation of any description on these areas shall be allowed to grow to a height of no more than 25 cm.

2. Road Surface at the Crossing

The minimum standard for the surfacing of level crossing shall be waterbound macadam even where the approach road is of earth. Where the standard of the approach road is higher than this, that road standard shall be adopted.

3. Barriers

(a) The lifting barriers shall be pivoted as close to the railway as practicable on both sides of the road on each approach to the crossing.

(b) When lowered, the barrier shall be as nearly horizontal as possible and shall extend across the full width of the road lane and the footpaths.

(c) When the barriers are fully lowered their uppermost surfaces shall be not less than 900 mm above the road surface at the centre of the road lane the underclearance between the barriers and the road shall not exceed 1 metre.

(d) When in the fully raised position the barriers shall be inclined towards the road at an angle of between 5 and 10 degrees from the vertical. No part of any barrier or of any attachment thereto which is less than 5 metres above the level of the road shall be horizontally displaced from the nearer edge of the road by less than 450 mm, and no part of any barrier or of any attachment thereto which is less than 2 metres above the level of the footpath shall be horizontally displaced from that edge of the footpath further from the road by less than 150 mm.

(e) The barriers shall be as light as possible but shall also be strong enough to prevent distortion or fracture likely to be caused by wind pressure.

(f) The barriers shall display on both front and rear faces alternative red and white bands each approximately 600 mm long and to the full depth of the barriers. A band of red retro-reflecting material not less than 50 mm deep shall be provided along the full length of each red band.

(g) Suitable screening shall be provided for each barrier machine to guard against danger to persons from the operating mechanism and moving parts of the machine.

(h) All gates and barriers must be fitted with a red reflective disc of not less than 75 cm diameter for use by day and a red light for use by night or when visibility is restricted by fog, mist or other circumstance. The disc and light must show red in both directions.

(i) Each automatic barrier must start its downward motion not less than three seconds after flashing lights begin to operate and assume the horizontal position in a minimum of five seconds before the arrival of any train at the crossing. At four-quadrant gate installations these time requirements apply only to the gates closest to oncoming traffic.

4. Warning Signs

(a) A Whistle Board shall be placed on the right hand side of the railway on both sides of the crossing at a minimum distance of 200m. For classes C and D crossing, an additional whistle board may be placed in advance if a high risk level is perceived.

(b) For classes A, B, C and D crossing, a Level Crossing Marking Board in the form of a crossbuck sign (or St. Andrew's Cross) shall be placed at maximum 20m on the left side of the road to warn approaching motorists. Where the crossing is over two or more railway tracks the level crossing board shall show the number of tracks to be crossed, on a banner secured below the cross arms. The Level Crossing Marking Board shall be provided and maintained by the railway.

(c) The road authority shall erect and maintain an Advance Warning Sign at least 100 metres from the actual crossing on the left hand side of the road to give motorists warning that they are approaching a crossing over the railway. It shall be in the form of a black silhouette of a locomotive on a yellow rectangle 80 cm square surmounted by a red triangle on the same post. It is required for all crossings class A, B, C and D except on private road.

(d) Where there is a junction of two or more roads in the immediate vicinity of the level crossing and local circumstances require Level Crossing Marking Boards and Advance Warning Signs on each road, these shall be provided.

5. Flashing Signals and Audible Warning Devices

(a) Each flashing light unit must be positioned and aligned in accordance with installation plans. Each unit shall be maintained to prevent dust and moisture from entering the interior of the unit. All light units shall flash alternately and the number of flashes per minute for each light shall be a minimum of 35 and a maximum of 65.

(b) An audible warning device shall be provided on or adjacent to each left hand side flashing light signal post on each approach to the crossing.

(c) The flashing light and audible warning system must be automatically activated for not more than 20 seconds prior to the level crossing being occupied by rail traffic. The 20 second warning time requirement applies to normal through train operations rather than shunting movements or train operations that require stopping short of the level crossing.

6. Track Circuits and Other Protective Devices

(a) All control circuits that affect the safe operation of the level crossing warning system shall be designed on a fail-safe principle.

(b) Four quadrant barrier systems shall be fitted with obstacle detection system for purpose of preventing vehicles being caught up between the gates.

(c) A standby battery source of power and indicator or alarm shall be installed to ensure the warning system continues to function during any period of primary power interruption.

7. Inspections and Tests

71 Inspections and tests shall be made periodically to determine if the warning system is properly maintained. Any electronic device, relay, or other electromagnetic device that fails to meet the requirements shall be removed from service and a full inspection and tests of all required components must be successfully completed before operations resume.

72 The normal functioning of any system shall not be interfered with when testing or otherwise, without first taking measures to provide for the safety of highway traffic.

73 The following are minimum requirements for inspection and testing of level crossing activation, protection and warning devices. More stringent requirements not inconsistent with these regulations shall be applied if specified by the manufacturer or railway rules.

- (a) Ground Tests: A test for grounds on each energy bus furnishing power to circuits that affect the safety of warning system operation shall be made when an energy bus is placed in service, and at least once a month thereafter.
- (b) Battery Voltage: Standby power shall be tested at least once each month.
- (c) Flashing light units and lamp voltage: Each flashing light unit must be tested when installed, and at least once every twelve months each flashing light unit is required to be inspected for alignment and frequency of flashes in accordance with installation specifications. At least once a month each flashing unit will be required to be inspected for dust and damage to roundels to ensure visibility of the light unit.
- (d) Gate arm and gate mechanism: Each gate arm and gate mechanism must be inspected, and gate arm movement be observed for proper operation, at least once each month. Test of hold-clear devices shall be required at least once every twelve months.
- (e) Warning system operation: A road-rail level crossing warning system must be tested for proper operation when the warning system is placed in service. Thereafter whenever modified or disarranged it should be tested at least once each month.
- (f) Warning Time: A level crossing warning system must be tested for prescribed warning time at least once every year, and when the warning system is modified because of change in train speeds.
- (g) Obstacle Detectors: Road traffic signal preemption interconnectors, for which a railway has maintenance responsibility, shall be tested at least once each month.
- (h) Relays: Each relay that affects the proper functioning of a crossing warning system shall be tested at least once every four years. Alternating current vane type relays, direct polar type relays, relays with soft iron magnetic structure shall be tested at least every 2 years. Alternating current centrifugal type relays shall be tested at least once every 12 months.
- (i) Timing relays and timing devices: Each timing relay and timing devices must be tested at least once every twelve months. The timing would be required to be maintained at not less than 90% nor 110% of the predetermined time interval, which shall be shown on the plans or marked on the timing relay or timing device. Internal timing devices associated with motion detectors, motion sensors, and level crossing predictors are not subject to the requirements of this section.
- (j) Insulation resistance tests, wires in trunking and cables: Insulation resistance test shall be made when wires or cables are installed and at least once every ten years thereafter.
- (k) Cut-out circuits: Each cut-out circuit shall be tested at least once every three months to determine that the circuit functions as intended. This type of circuit includes both switch cut-out circuits and devices which enables personnel to manually override the operation of automatic warning systems.
- (l) Insulated rail joints, bond wires, and track connections: Each insulated rail joint, bond wire, and track connection located within the limits of a level crossing train detection circuit must be inspected at least once every three months.

Railways (Level Crossing)

GN. No. 408 (Contd.)

74 Results of tests and Inspections: Results of tests made in compliance with this part must be recorded on preprinted or computerized forms by the railway, or by electronic means. The records shall be kept at least one year from the date of the test.

Dodoma,
30 July, 2018

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Minister for Works, Transport and Communication