

4. Point to promote measures for abolishment of level crossing

It is described in the above that the ultimate measure to eliminate the level crossing accident is to abolish level crossing itself. However, although the relevant parties such as railway operator, road administrator, local residents, etc., are discussing for the abolishment of level crossing based on the above idea, it is considered that there are many level crossings where discussion is not in advance.

Therefore, the patterns and the points () of the process of the cases which resulted to abolish level crossing are summarized as follows.

It is expected to implement concrete measures to prevent accidents referring each case shown in Section 5, in pages 9 to 13, etc.

(a) Individual abolition of the level crossing without crossing gate

➡ The railway operator and the road administrator explained the necessity of abolishment of level crossing, and promoted the understandings and cooperation of the local residents, etc.

(b) Integration and abolishment together with neighboring level crossing

(i) Abolish at the same time as widening the neighboring level crossing.

➡ Improve safety of neighboring level crossing, i.e., prepare walkway or widen level crossing road, and guide the passersby of level crossing.

(ii) Establish bypass route to the neighboring level crossing, and abolish.

➡ To make easy to use neighboring level crossing, by preparing bypass route, and guide the passersby of level crossing.

➡ Local government and railway operator cooperated with each other to prepare bypass route.

(c) Abolishment had been scheduled after completed work for overhead crossing of level crossing and surroundings, but abolished earlier upon the occasion of the occurrence of accident.

5. Examples to realize abolishment of level crossing without crossing gate

Four examples are introduced in the followings, based on the hearing from railway operators and the local governments.

Among these, the case (b) (i) and (b) (ii) part.2 had occurred in Chikusei City, Ibaraki Prefecture. The Chikusei City, responded to the occurrence of the accident with fatality in class four level crossing, in the strong thought that "the City will abolish dangerous class four level crossings in order not to cause the similar accident anymore", promote discussions with local residents as the City took the lead, and realized to abolish not only level crossing where caused the accident with fatality, but also abolished the other class four level crossings where accident had not occurred yet. The discussions on the abolishment are now continued for the class four level crossings still existed in the city.

We consider that the other relevant parties such as railway operators and the local governments, etc., promote the discussions in the relevant parties before accident will occur and implement the concrete measures such as the abolishment, etc., in early stage, referring these activities to abolishment of level crossing.

Example of "(a) abolished only the level crossing without crossing gate"

- Responded to the occurrence of accident with fatality, explained necessity to abolish level crossing, and understandings and cooperation of local residents, etc., were accelerated -

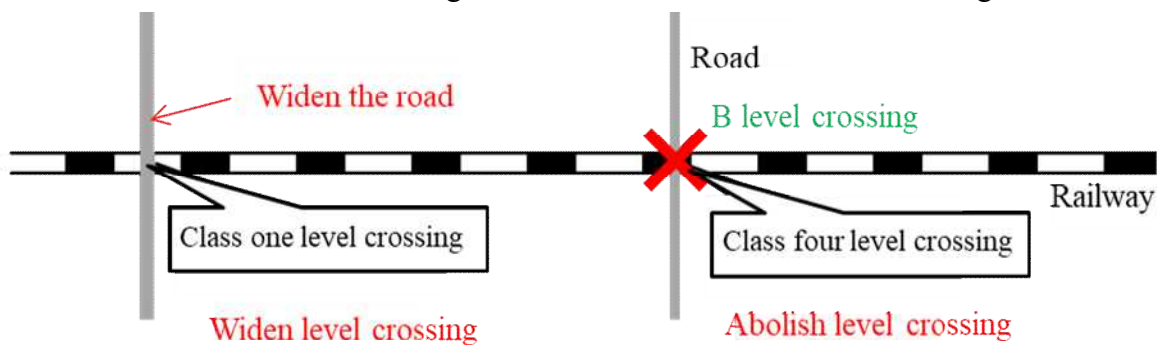
When the accident occurred in class four level crossing in the past, the railway operator requested the local government who is the road administrator, to discuss based on the abolishment of level crossing, and has been promoted to abolish class four level crossings in that area or to change to class one level crossings, but could not decide to abolish because there were not a few opinions which opposed to abolish the A level crossing.

This time, in view of the seriousness that the accident with fatality had occurred, the local government implemented the investigation on traffic volume of the level crossing, summarized the investigated results and held the explanatory meeting for the local area, by announcing to the members of the city council, the chairmen of the district, the local residents, etc. As the results, the understandings to the abolishment of level crossing could be obtained, then the railway operator abolished the A level crossing after implemented the required procedures.

Example of "(b) (i) Abolish in cooperate to widen the neighboring level crossing"

- Improved safety of the neighboring level crossing, i.e., prepared walkway and widen the level crossing road, then guided the users of level crossing -

Responded to the occurrence of the accident with fatality, the relevant parties such as the local government, the police, the school, etc., studied on the abolishment of the B level crossing, but expressed disapproval for the abolishment because the present status of the neighboring class one level crossing and the connected road was narrow and dangerous, therefore, the relevant parties decided to abolish the B level crossing after widened, i.e., prepared walkway, the neighboring level crossing. The local government prepared the revised budget to widen the neighboring level crossing, implemented to widen the level crossing, after that, abolished the B level crossing.

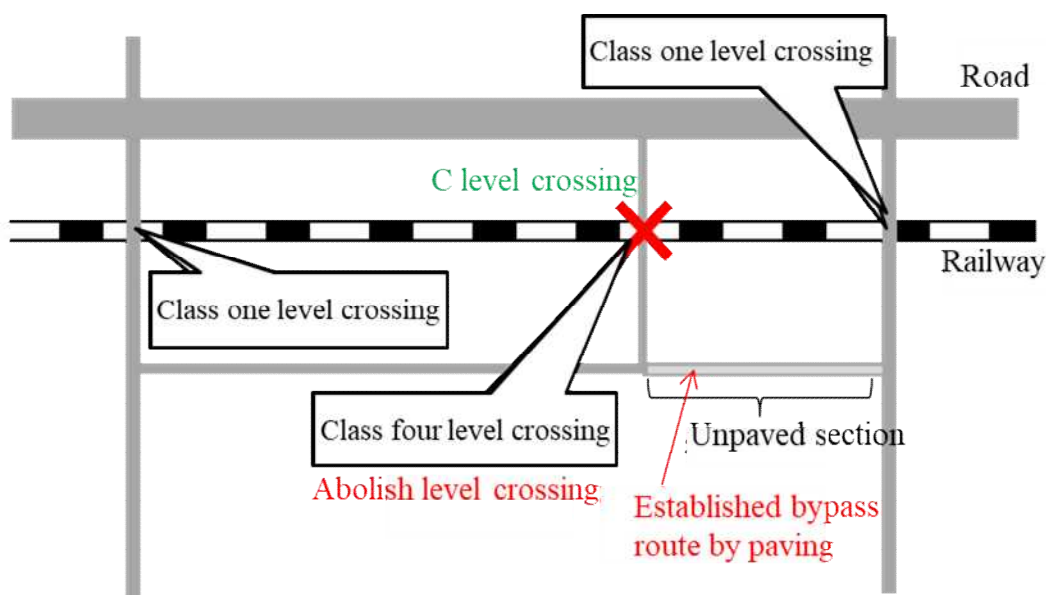


- Widen the level crossing
 - Widen the road
 - Preparation of walkway, green part
 - Relocation of the road warning device and change to the overhang type
- Improved the utility of pedestrian, and visibility of level crossing !

Example of "(b) (ii) Prepare bypass route to the neighboring level crossing, and abolish", part 1
 - To make easy to use the neighboring level crossing, *i.e.*, provision of bypass route, and guide the users of level crossing -

The accident that train collided with bicycle occurred in the C level crossing in the past, then the railway operator, the local government, the police, and the local neighborhood association held the discussions, and the local government installed the car stop fence and the guard pipes in order to call attention to pass the level crossing. After that, the railway operator and the local government discussed on the abolishment of level crossing, etc., but still continued the discussions considering that there were the passersby of the level crossing.

Responded to the accident with fatality at this time, the railway operator, the local government, the local neighborhood association discussed on the safety measures of the C level crossing, and agreed to abolish the C level crossing after prepared the bypass route to the neighboring level crossing. After that, the local government completed the installation of bypass route, and abolished the C level crossing.



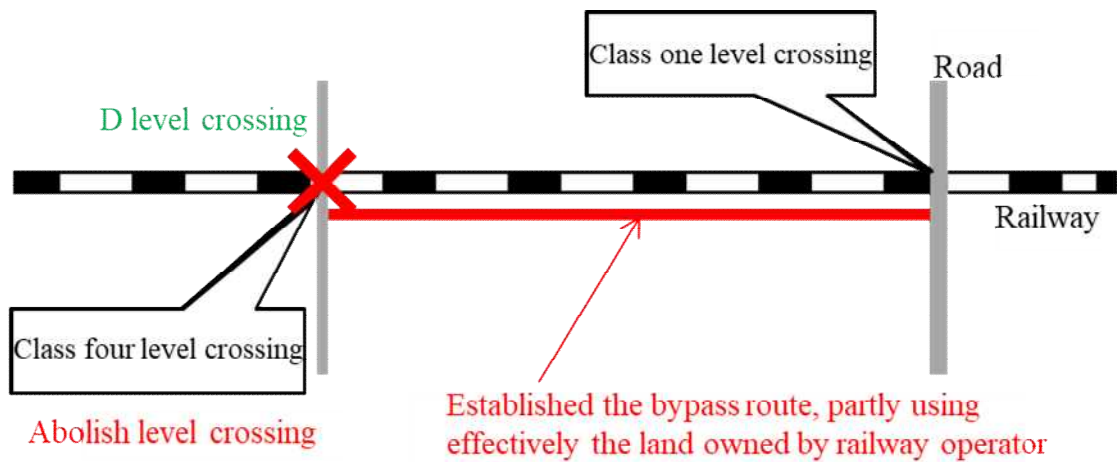
Example of "(b) (ii) Prepare bypass route to the neighboring level crossing, and abolish", part 2
 - The local government and railway operator cooperated with each other to prepare bypass route -

Although this example is not the case of class four level crossing generated the accident with fatality, but the example that the local government tackled to abolish class four level crossing existed in the jurisdiction, *i.e.*, the D level crossing, responded to the occurrence of the accident with fatality occurred in the other class four level crossing.

The local government implemented the investigation by questionnaire, which investigated the status and purpose to use level crossing and the OD, *i.e.*, origin and destination of the movement, for the users of the level crossing, together with railway operator, for the abolishment of the level crossing, based on the recognition that class four level crossing is highly dangerous, and held the study meeting on the safety measures together with the resident's association to study on the abolishment of the level crossing.

The major opinions in the study meeting was to abolish the level crossing while securing the bypass route to the neighboring level crossing, and the local government studied on the bypass route and discussed with the relevant parties and reached the results to prepare the bypass route by renting the land owned by the railway operator.

In parallel to the above measures, the document to ask cooperation for the abolishment of the level crossing were distributed to the local residents via the resident's association. After the local government completed the preparation of the bypass route, the D level crossing was abolished.



Abolished class four level crossing
Crossed three routes of three railway operators



Bypass viewed from the site of class four level crossing
Rent the leased land of railway operator

"Integration and abolishment together with neighboring level crossing" is to study the measures as a set with the neighboring level crossing, and plan the reduction of number of level crossings while securing the convenience of local traffic. In addition, there was the case of the integration and abolishment that the level crossing of small traffic was abolished and another level crossing was changed to the class one level crossing in the case that there were plural neighboring class four level crossings.

Furthermore, in the example to realize the abolishment of level crossing, the local government took the leading roles to study the policy of the measurements by hearing the voices of the resident's association, and the local residents, etc., and the local government took measures such as to widen the neighboring level crossing and to prepare the bypass route, therefore, it is considered that the local government took the major roles in this example.

It is necessary to study the measures against the class four level crossing individually responding the circumference of the level crossing and its used status, etc., however, it is expected to promote the studies on the concrete measures by referring these examples.

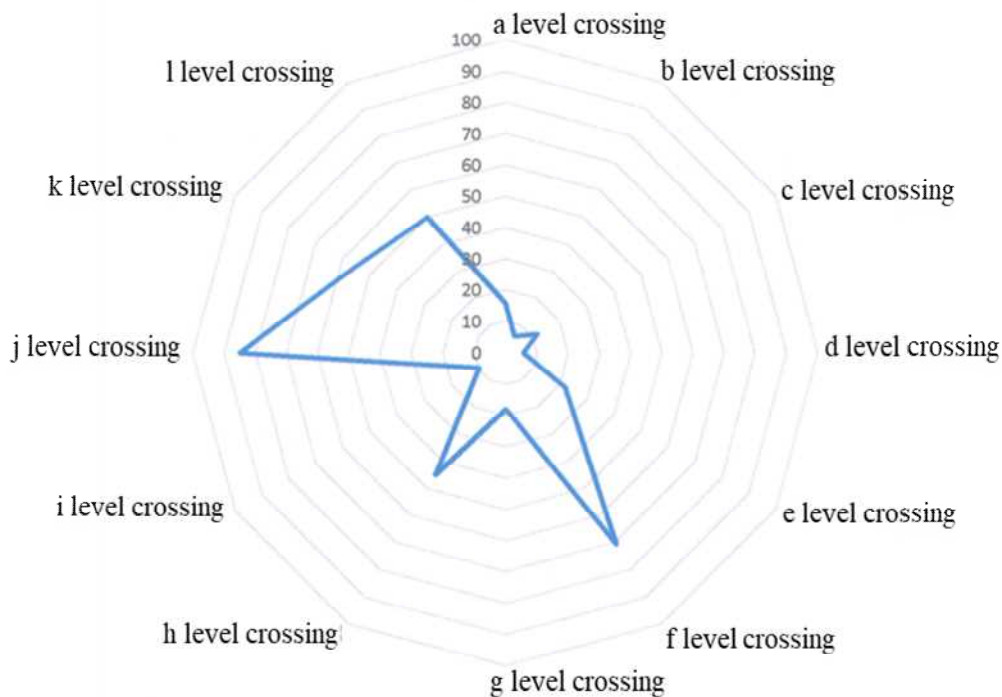
[Reference] Example of material used by the railway operator in the discussion with the local government on the abolishment of level crossing, etc.

Kanto Railway Co., Ltd. has been possessed together with the track side local governments, etc., on the information which visualized the risks to cause accidents, and using effectively for the discussions on the abolishment of individual level crossing and for the promotion of the comprehension on the discussions for urgent implementation of the required safety measures.

The following figure shows the risks to cause accident, based on the status of the occurred accidents, the traffic volume and installed status of level crossing protection devices in individual level crossing, which are converted to the numerical values, indicated in the radar chart and put in order by the level of risks.

It is important to shorten the period till to implement the concrete measures such as the abolishment, etc., as soon as possible, by the positive actions to promote such understandings.

Radar chart on the degree of danger of level crossings, image



Degree of safety	
Obstruction warning signal	-5
Obstruction detecting device	-10
Overhang type warning device	-10
Omnidirectional warning light	-5
Class four warning sign	-5
Hanging belts	-5
Color pavement	-10
Others	-3

Degree of danger	
Contacted accidents in the past 5 years	20
Just before crossing, in the past 5 years	5
Fallen barrier trap, in the past 5 years	5
Class four level crossing	50
Complex shaped level crossing	10
Traffic volume/100, maximum 30	30

High risk level crossing in the city				
Order	Name	Point	Class	Remarks
First	j level crossing	85 pt	Class one	Scheduled to renew the overhang type warning device in 2018
Second	f level crossing	71 pt	Class one	Scheduled to renew the overhang type warning device in 2019
Third	k level crossing	55 pt	Class four	Under discussion for abolishment
Fourth	l level crossing	50 pt	Class one	Prepared overhang type warning device, color pavement, walk way, in 2017 FY
Fifth	h level crossing	45 pt	Class one	

The risks to cause accident were converted to the points based on the degree of safety, *i.e.*, prepared status of safety facilities, etc., and the degree of danger, *i.e.*, the occurred status of accident, visibility, traffic volume, etc., and reviewed by the total point.