

LCQ7: Transportation of explosives required for the construction works of the South Island (East) Line

Following is a question by the Hon Patrick Lau and a written reply by the Acting Secretary for Transport and Housing, Mr Yau Shing-mu, at the Legislative Council meeting today (July 6):

Question:

Recently, there was a serious accident in which a dangerous goods vehicle (DGV) overturned on Tai Po Road, paralysing the traffic in the New Territories for seven hours, and some members of the public are concerned about the safety of DGVs. According to the information provided by the MTR Corporation Limited (MTRCL), during the construction of the South Island (East) Line, explosives are collected daily by the Mines Division of the Civil Engineering and Development Department (Mines Division), from Kau Shat Wan on Lantau Island, and transported from North Point Pier through busy roads across various districts to the Southern District for delivery to the sites in Wong Chuk Hang first via Deep Water Bay Road, Nam Fung Road, Wong Chuk Hang Road and Nam Long Shan Road, etc., and from the sites in Wong Chuk Hang, the explosives are then transported via Nam Long Shan Road and in Wong Chuk Hang Road, etc. to the temporary explosives magazine site at Chung Hom Shan (Chung Hom Shan Magazine) by 3pm for storage, and from where the explosives are collected twice daily (from 4am to 5am and before 4pm) by MTRCL for transporting via Repulse Bay Road and Wong Chuk Hang Road, etc. to the MTR sites at Nam Fung Road and in Ap Lei Chau for tunnel blasting. In this connection, will the Government inform this Council:

(a) given that at present, the Mines Division's daily route for transportation of explosives passes through the MTR sites at Nam Fung Road and in Ap Lei Chau on the way to Chung Hom Shan Magazine, whether it will consider taking the opportunity to deliver explosives to the two sites for use in the blasting operations in the afternoon; if not, of the reasons for that; and whether it has considered arranging the explosives delivery vehicles of the Mines Division to transport explosives directly from the North Point Pier or the sites in Wong Chuk Hang to the aforesaid two MTR sites, so as to avoid respectively transporting the explosives by the explosives delivery vehicles of the Mines Division to Chung Hom Shan Magazine at 3pm daily and then collecting from the Site by the explosives delivery vehicles of MTRCL for

transportation to the MTR sites at 4pm, thus avoiding duplication of routes and prolonged transportation time of explosives on the road; if not, of the reasons for that;

(b) given that MTRCL has pointed out that an interval of 10 hours must be maintained between the blasting operations carried out during the daytime and in the evening, and explosives will be delivered to the construction sites only two to three hours before the blasting operations take place, whether it will advise MTRCL to carry out blasting operations at 7am and 5pm to 6pm for compliance with the provision that blasting operations must be completed by 7pm, and make it possible for the timing of the blasting operations carried out in the afternoon to dovetail with the arrangements proposed in (a) that the Mines Division can deliver explosives directly to the aforesaid MTR sites by 3pm daily; if not, of the reasons for that;

(c) given that the traffic in the Stanley area is very busy after 3pm, whether it will consider dovetailing the arrangements proposed in (a) and (b) to cancel the arrangement of explosives transporting from Chung Hom Shan before 4pm, so that vehicles carrying explosives will not need to travel back and forth in the district during the peak hours of traffic; if not, of the reasons for that; and

(d) if the Mines Division is unable to deliver explosives directly to the sites at Nam Fung Road and in Ap Lei Chau, whether it will consider coordinating with MTRCL so that when explosives are delivered to the sites in Wong Chuk Hang by the explosives delivery vehicles arranged by the Mines Division, MTRCL may be allowed to collect the explosives directly there and deliver the explosives to the MTR sites, thus shortening the route for delivery of explosives; if not, of the reasons for that?

Reply:

President,

The South Island Line (East) (SIL(E)) is a new rail corridor from South to North of Hong Kong Island. It starts from South Horizons on Ap Lei Chau to Admiralty via Lei Tung, Wong Chuk Hang and Ocean Park. The SIL(E) will serve the 350 000 people living and working in the Southern District. At present, travelling by road-based transport between South Horizons and Admiralty takes about 25 to 45 minutes during rush hours. With the commissioning of the SIL(E), the travelling time from the Southern District to Admiralty will be about ten minutes. This long-awaited railway project has commenced its construction in May 2011 for the completion in

2015.

Part of the SIL(E) will be constructed using the drill and blast method. In fact, the blasting works for railway tunnel construction and site formation is by detonating explosives installed in the drill holes in the rock mass. The air pressure created in the blast breaks the solid rock mass into parts, which can be excavated easier. There is no open flame created in a blast. Sufficient safety measure is also provided.

Based on the SIL(E) works schedule, the MTR Corporation Limited (MTRCL) will carry out one blast a day at the site of Wong Chuk Hang Depot every afternoon for the site formation work; and two blasts a day at the Nam Fung Tunnel and Ap Lei Chau Tunnel sites respectively to match with the tunnel construction programme. Otherwise, the anticipated completion of the project by 2015 will be delayed. The programme of the blasting works is constrained by the limit in the sizes of the cut faces in both tunnels and the preparatory works required for each blast. As a result, the MTRCL cannot reduce the number of blast in both tunnels to once a day by increasing the scale of each blast further.

Our replies to the specific questions are as follows:

(a), (b) and (c) According to the "Dangerous Goods Ordinance" (the Ordinance), it is prohibited to transport explosives in or out of the Government Explosives Depot at Kau Shat Wan, Lantau, or within the Victoria Harbour by sea between sunset and sunrise. Upon arrival at the work sites, the explosives must be installed immediately, and cannot be laid idle at the work sites or on the delivery vehicles.

According to the stringent process for blasting, prior to each blast, there are a number of preparatory works required which includes drilling, installation of explosives, checking, testing, evacuation of staff from tunnel and work site, and establishing protection measures around the blasting zone. After each blast, suitably qualified professionals will enter the work site for inspection, break the rock boulders into smaller pieces mechanically, clear the excavated material in the tunnel, carry out reinforcement work, review the design of the next blast and carry out the preparatory steps abovementioned for the next blast. These procedures will normally take 12 hours to complete, therefore the two blasts carried out at Nam Fung Tunnel and Ap Lei Chau Tunnel will have to be in 12 hour interval. As the time required for the preparatory work varies with a number of factors including the result of the previous blast and the actual ground conditions, it is difficult to accurately predict the time of

each blast.

In view that it is difficult to accurately predict the time of each blast and the explosive is not allowed to be laid idle at the work sites according to the Ordinance, it is necessary to set up a temporary magazine at a remote location at Chung Hom Shan (Chung Hom Shan Magazine) for storage and delivery of the explosives, to enable having two blasts a day at the Nam Fung Tunnel and Ap Lei Chau Tunnel according to the Ordinance and to meet the programme of SIL(E). The contractor has a very tight schedule for these necessary steps. When the preparatory work is almost completed, the contractor, as required by the Ordinance, will inform the Chung Hom Shan Magazine and arrange the delivery of the explosives to the work site, such that two blasts can be carried out in a day.

The MTRCL will avoid the delivery of the explosives at morning and evening peak traffic hours. The MTRCL plans the first delivery to be carried out at around 4am to 5am in the mornings so as to meet with the morning blast at around 7am. The second blast is expected to be at around 7pm. To match with the time of the second blast, the explosives will depart the Chung Hom Shan Magazine at around 4pm and arrive at the work sites at around 5pm for the preparation of the blast at around 7pm.

The MTRCL has taken the community's views regarding the delivery time, and will avoid delivery during peak traffic hours. It is expected that the explosive delivery from the Chung Hom Shan Magazine to the Nam Fung Tunnel and Ap Lei Chau Tunnel sites will require only 4 vehicle trips every afternoon. It will not have any significant impact on the traffic along Repulse Bay Road and Chung Hom Kok Road.

As there will be only one blast a day at Wong Chuk Hang Depot site, the MTRCL has requested the contractor arranging the works to match with the schedule of the delivery vehicle from Mines Division of the Civil Engineering and Development Department (Mines Division), so that the explosives can be delivered to the work site directly, without routing to the Chung Hom Shan Magazine.

In fact, the use of explosives for construction in Hong Kong has a long and safe history. The professionals in the industry are also experienced in the application. Record shows that the explosive delivery vehicles have not been involved in any traffic accidents that endangered the explosives, showing that the storage and delivery of explosives have been very safe.

The delivery vehicles must have different compartments to deliver detonator and explosives separately with fire fighting equipment. Drivers of the delivery vehicles are required to complete the fire fighting and explosives handling training and deliver the explosive according to the safe driving procedure. The delivery vehicles and the drivers are also required to be approved by the Mines Division.

The speed limit of delivery vehicles is the same as other vehicles. They must comply with the statutory speed limit. To further enhance safety, the explosives and detonators will be delivered separately in different vehicles.

(d) According to the Ordinance, it is stipulated on the explosive delivery permits that the explosives must be retrieved from a designated storage and transported to a designated location. The destination cannot be altered and the vehicles cannot wait in idle during delivery. The suggestion given in the question that the MTRCL may distribute the explosives to the Nam Fung Tunnel and Ap Lei Chau Tunnel sites when the delivery vehicles of the Mines Division arriving the Wong Chuk Hang site shall also comply with the requirements of "no idle during delivery" and "no idle at work site". As explained in the paragraphs above, it is difficult to accurately predict the time for the second blast, no matter the explosive is delivered by the vehicles of Mines Division direct or is distributed by the MTRCL, the time of delivery is difficult to match with the blasting programme accordingly. Therefore, the explosives for the blasts in Nam Fung Tunnel and Ap Lei Chau Tunnel have to be stored in and delivered from the Chung Hom Shan Magazine.

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