### 立法會 Legislative Council

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### **Panel on Transport**

Information note prepared by the Legislative Council Secretariat for the meeting on 12 April 2012

## The fire incident of Lion Rock Tunnel and fire prevention in tunnels in Hong Kong

The subject of fire prevention in tunnels in Hong Kong has not been discussed by the Panel on Transport. Questions concerning fire fighting installations in tunnels and the recent fire incident of Lion Rock Tunnel were raised at the Council meetings of 6 December 2000, 10 December 2003 and 21 March 2012 respectively. The questions and the Administration's replies are in **Appendix I**.

2. Press reports on the recent fire incident of Lion Rock Tunnel are in **Appendix II** for members' reference.

Council Business Division 1 <u>Legislative Council Secretariat</u> 2 April 2012



LCQ1: All tunnels comply fully with fire safety requirements

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Following is a question by the Hon Ip Kwok-him and a reply by the Secretary for Transport, Mr Nicholas Ng, in the Legislative Council today (December 6):

Question: It has been reported that the tube boards of the Lion Rock Tunnel and the Aberdeen Tunnel are made of a plastic material, which will release poisonous gas on combustion. In this connection, will the Government inform this Council whether:

(a) it has assessed if the tube boards of the two tunnels comply

with fire safety standards; if so, of the results of the

### assessment;

- (b) it has plans to replace the tube boards of the two tunnels; if so, of the commencement and completion dates of the works; and the measures it will take to enhance the fire safety of the two tunnels before the completion of such works; and
- (c) it has taken out insurance against casualties caused by such tube boards?

### Reply:

### Madam President,

All tunnels are equipped with fire protection and fire fighting installations which comply fully with Fire Services Department (FSD)'s requirements and are maintained by registered fire service installation contractors. There are also established procedures to handle fire incidents by the tunnel operators. Such procedures are reviewed regularly on the basis of the latest development on tunnel emergency management. In addition to regular internal fire fighting training, tunnel operators hold fire drills with FSD at least once a year to enhance the fire fighting capabilities of their staff.

Only one tunnel, the Lion Rock Tunnel, which was opened some 30 years ago, has tube boards made of a plastic material called Polyvinyl Chloride (PVC). This material is not harmful and it is combustible with release of poisonous gas only when it is burnt continuously up to a temperature of 750 degrees celsius. However, the fire risk of such an occurrence is extremely remote as the existing fire fighting installations in the tunnel are designed to meet the latest fire safety standards.

Apart from regular maintenance, Highways Department (HyD) conducts periodic reviews on the condition of the tube boards and plans for their upgrading as better alternative material becomes available. Indeed, HyD will upgrade the tube boards of the Lion Rock Tunnel next year. The replacement programme will take two years. During the works period, HyD and Transport Department (TD) would ensure that safe and uninterrupted operation is maintained for the Tunnel.

Government requires tunnel operators to take out adequate insurance coverage for injury to persons or damage to property arising out of the operation and maintenance of the tunnels. Such public liability insurance covers any accidents, including claims arising out of tunnel tube boards.

End/Wednesday, December 6, 2000

**NNNN** 

### Press Release



LCQ4: Fire fighting installations in tunnels

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Following is a question by the Hon Andrew Cheng and a reply by the Secretary for the Environment, Transport and Works, Dr Sarah Liao, in the Legislative Council meeting today (December 10):

### Question:

Regarding the respective quantities of various types of fire service installations and equipment installed in toll road tunnels, will the Government inform this Council:

- (a) of the criteria and factors adopted for determining the types and quantities of fire service installations and equipment to be installed in each toll road tunnel;
- (b) of the respective quantities of various types of fire service installations and equipment installed in each toll road tunnel; and
- (c) of the date(s) at which the existing quantities of various types of fire service installations and equipment installed in Hung Hom Cross-Harbour Tunnel was (were) stipulated; whether it has assessed if the quantities of these installations and equipment are adequate to cope with fire and emergency incidents in the tunnel caused for various reasons; if so, of results of the assessment?

### Reply:

Madam President,

The "Code of Practice for Minimum Fire Service Installations and Equipment" ("Code of Practice") issued by the Fire Services Department stipulates the requirements for fire service installations and equipment as well as issues regarding their application in road tunnels. The tunnels in Hong Kong are equipped with fire protection and fire fighting installations which comply fully with the requirements of the Fire Services Department.

The provision of fire fighting installations in each tunnel are set out in the <u>Annex</u> to the written reply. The differences in the number of fire service installations in the tunnels are attributable to the specific design and site constraints of each tunnel.

Upon the commissioning of the Cross Harbour Tunnel (CHT) in 1972, its fire service installations have often been replaced and upgraded to meet up-to-date standards and requirements. The tunnel operator has engaged a registered fire service installation contractor to

conduct regular surveys on the various equipment to ensure that they meet safety standards. In addition, the CHT is carrying out a large-scale improvement project and the improvement items to be completed in the coming three years include:

- a) upgrading of the Traffic Control and Surveillance System;
- b) replacement of fire hydrants;
- c) installation of illuminated signs for pedestrian cross-passage and enclosed fire safety installations; and
- d) replacement of the radio communication system within the tunnel.

The requirements for fire service installations in the "Code of Practice" are the most feasible arrangements, which have made reference to experience and relevant international safety standards. Fire service installations are but part of a whole fire protection regime. In addition to the hardware, the tunnel operators have established procedures for handling fire incidents and have arranged regular fire fighting training for their staff. The tunnel operators also hold regular joint fire drills with the Fire Services Department to ensure quick responses and good co-ordination in handling fire incidents in tunnels.

Ends/Wednesday, December 10, 2003

**NNNN** 



### LCQ4: Fire protection and fire fighting installations in tunnels

**Annex** 

### **Fire Fighting Equipment in Toll Tunnels**

Tunnel	Cross Harbour Tunnel	Eastern Harbour Crossing	Western Harbour Crossing	Aberdeen Tunnel	Lion Rock Tunnel	Shing Mun Tunnel	Tseung Kwan O Tunnel	Tate's Cairn Tunnel	Tai Lam Tunnel
Tube Length (km)	1.9	2	1.97	1.9	1.4	2.6	0.9	4	3.73
Date of operation	2.8.1972	21.9.1989	30.4.1997	12.3.1982	14.11.1967(S) 18.1.1978 (N)		9.11.1990	26.6.1991	25.5.1998
No. of break glass devices (each tube)	78	78	62	38	16	100	16	80	75
No. of emergency telephones (each tube)	78	54	42	38	28	100	16	78	76
No. of emergency exits (each tube)	18	27	21	3	_*	23	8	24	36
No. of fire extinguishers (each tube)	117	162	84	114	28	200	32	160	152
No. of ventilation/jet fans (each tube)	10	15	23	4**	34	44	20	16	20 (S) 19 (N)
No. of recovery vehicles and patrol cars	10	8	9	6	5	7	6	7	11
No. of hose reels (each tube)	_#	51	41	_##	16	51	17	42	75
No. of fire hydrants (each tube)	38	27	21	38(S) 37(N)	16	25	8	40	76
No. of CCTVs (each tube)	12	15	21	15	15	14	9	22	21

### **Notes**

<sup>\*</sup> Owing to site constraint, there are insurmountable technical problems to install emergency exits in Lion Rock Tunnel. To enhance the safety standard, a drencher system was installed in the Lion Rock Tunnel in 1997 upon the recommendation of Fire Services Department. The Tunnel is also equipped with many jet fans for fast extraction of smoke during fire incidents.

<sup>\*\*</sup> Number of ventilation / jet fans installed inside the tunnel tubes varies with the design of the tunnel ventilation system and specifications of fans.

- Due to constraints imposed by the original design, hose reels could not be installed. Hoses are stored on the patrol cars. Hoses are stored on the light recovery vehicles.
- (S) South Bound Tube
- (N) South Bound Tube

### Press Releases

LCQ14: Number 3 alarm fire inside Lion Rock Tunnel

Following is a question by the Hon Ip Wai-ming and a written reply by the Secretary for Transport and Housing, Ms Eva Cheng, in the Legislative Council today (March 21):

Question:

A Number 3 alarm fire which was caused by repair works on underground water mains broke out inside the Lion Rock Tunnel (the Tunnel) on March 8 this year. The incident has not just necessitated a two-week closure of the Tunnel for emergency repairs, but has also aroused public concern about issues of safety and means of escape in respect of the tunnels built in early days. In this connection, will the Government inform this Council:

- (a) whether the authorities have drawn up and updated the measures and equipment for safety management, emergency contingency plans for incidents inside tunnel tubes, and conducted regular training and drills for the road tunnels and cross-harbour tunnels built in different periods in Hong Kong; if they have, of the details; if not, the reasons for that;
- (b) whether the drencher system installed inside the tubes of the Tunnel was activated when the aforesaid fire broke out; if not, of the reasons for that; whether the drenchers functioned normally whenever a fire broke out or a drill was conducted inside the tubes of the Tunnel in the past three years; if not, of the number of failures and the details;
- (c) whether it knows, apart from the Tunnel, if the design of atgrade vehicular traffic with underground piping for public utilities is currently adopted for any road tunnel, cross-harbour tunnel or rail tunnel in Hong Kong; if so, the details of the tunnels concerned and the public utilities for which piping has been laid; how the authorities ensure the industrial safety of the workers who carry out repairs and maintenance for the tunnels and such underground facilities (including whether they will brief the workers on the escape facilities before commencement of the works); and
- (d) whether it knows, in addition to the Tunnel, which tunnels in Hong Kong are not equipped with escape doors or tubes, and rely only on tunnel exits as emergency exits; whether the authorities have considered adding a pedestrian escape tube inside the Tunnel and such tunnels in order to ensure the safety of tunnel users and other people concerned; if they have, of the details; if not, the reasons for that?

Reply:

President,

At about 3.30am on March 8, 2012, a fire broke out when a works contractor of the Water Services Department was carrying out water mains replacement and rehabilitation (R&R) works inside an underground utility chamber underneath the south-bound tube of the Lion Rock Tunnel (LRT). All workers carrying out the R&R

works immediately followed the site emergency procedures and evacuated safely. No one was injured. The fire was put out at around noon that day and the Fire Services Department (FSD) is investigating the cause of the incident.

As a result of the fire, the south-bound tube of LRT was once completely closed. The Transport Department (TD) activated the contingency measures immediately and implemented emergency traffic arrangements with relevant departments, the LRT operator and public transport operators to maintain smooth traffic between Sha Tin and Kowloon as far as possible. The fast lane of the south-bound tube of LRT was re-opened to traffic at 6am on March 12, 2012 after round-the-clock emergency repair works by the Highways Department (HyD), and the slow lane also resumed normal operation at 6am on March 19 after days of 24-hour expedited repair works by HyD. During the period when the repair works were carried out, the traffic at LRT was slightly more congested than usual but generally remained normal.

My reply to the various parts of the question is as follows:

(a) All road tunnels and cross-harbour tunnels in Hong Kong are equipped with facilities that meet safety standards, including fire service installations and equipment (FSI) required by FSD such as fire hydrant/hose reel systems, portable fire extinguishers, smoke extraction systems and emergency lighting systems. The FSI requirements are formulated by FSD according to relevant legislation as well as the conditions of individual road tunnels and actual operational needs. Every tunnel operator is required under the law to engage a registered fire service installation contractor to conduct annual inspection on FSI to ensure their compliance with relevant standards and legal requirements.

In addition, FSD, TD and all tunnel operators have drawn up contingency plans for handling emergency incidents including fires. In handling a tunnel incident, TD is responsible for coordinating emergency traffic and public transport arrangements and disseminating relevant information on a real time basis. On average, individual tunnel operators will conduct fire drills every six months jointly with relevant departments, including TD, FSD and the Police to test the effectiveness of the contingency plans and functionality of FSI. Such drills ensure the efficient and prompt execution of the contingency plans in case of tunnel emergencies. Relevant Government departments will also review from time to time the contingency measures with the tunnel operators and make adjustments when necessary.

(b) The south-bound and north-bound tubes of LRT are each installed with 11 drenchers, which are used primarily for isolating the fire and preventing it from spreading inside the tunnel tubes. The fire that occurred inside LRT on March 8, 2012 originated from an underground utility chamber below the tunnel tube rather than from the tunnel tube itself. As advised by the on-scene FSD officers, the LRT operator did not actuate the drenchers as the water sprayed from the drenchers could not check the spread of the underground fire.

In the past three years, only one fire incident occurred inside the tunnel tubes of LRT, during which the drenchers were actuated to prevent the spread of the fire. At every fire drill conducted in these three years, the tunnel operator actuated and tested the drenchers and all of them functioned normally during the tests.

(c) Each of the two tunnel tubes of LRT is equipped with utility chambers underneath. Two water mains each with a diameter of 1.2 metres (m) and one with a diameter of 1.4m are laid inside the utility chambers below the Kowloon-bound (i.e. south-bound) tube, whereas two water mains each with a diameter of 1.5m are laid inside the utility chambers below the Sha Tin-bound (i.e. north-bound) tube. Apart from LRT, only the Tseung Kwan O Tunnel (TKOT) and the Cross-Harbour Tunnel (CHT) have utility chambers running underneath the tunnel tubes. There are one water mains and one towngas pipe running underneath the tunnel tube of TKOT. The utility chamber housing the towngas pipe is a standalone one completely separated from the tunnel tube above with a monitoring system installed to ensure safety. As for CHT, telecommunications and power cables are laid inside the utility chambers underneath the tunnel tubes.

As stipulated in the occupational safety and health legislation, employers, including contractors engaging in repair and maintenance (R&M) works of road tunnels and their underground facilities, have to adopt adequate measures to ensure work safety and health of their workers. Such measures include providing a safe system of work and devising emergency plans.

To ensure that the workers of the works department / utility companies and contractors engaging in tunnel R&M works are fully aware of the means of escape and safety facilities inside the tunnels and their underground utility chambers before making an entry, the tunnel operators will explain to the safety officers of the contractors on the safety matters that workers should be aware of when carrying out works inside the tunnel tubes, including the means of escape and other safety facilities. Before each entry into the tunnel tubes, R&M workers have to provide their contact numbers to the tunnel operator for communication between tunnel staff and the workers in case of emergency. Furthermore, to ensure safety of the workers and tunnel users, all R&M works inside the tunnel tubes (and the underground utility chambers) will be conducted only when the tunnels are completely closed (except the towngas pipe utility chamber underneath TKOT as workers can enter the utility chamber directly to carry out R&M works via an access outside the tunnel tube without affecting the operation of the tunnel).

Apart from the above measures, R&M works inside the utility chambers underneath the tunnel tubes are classified as works in confined spaces, which shall be governed stringently by the Factories and Industrial Undertakings (Confined Spaces) Regulation. The Regulation requires, among other things, that a risk assessment should be carried out by a competent person to ensure safety at the works site before entry into a confined space. Contractors of the works department / utility companies are required to take all necessary safety precautions in accordance with the recommendations of the risk assessment report, such as providing in a satisfactory condition a sufficient supply of equipment for rescue and safety protection, and emergency escape, before issuing certificates to the workers for allowing their entry into the underground chambers to carry out the R&M works. All workers entering the confined spaces must be certified workers holding valid certificates. Also, workers conducting the R&M works at underground utility chambers have to follow the safety quidelines compiled by the TD and tunnel operators as well as relevant safety legislation to ensure their safety at work.

(d) Except LRT, all other tunnels in Hong Kong are equipped with emergency escape accesses (EEAs) between the two tunnel tubes. In case of emergency, tunnel users may travel from the tube where the incident takes place to the other tube via EEAs and leave the tunnel. The two tubes of LRT were constructed at different times. EEAs connecting the two tubes were not built as the first tube had already been open to traffic when the second one was constructed.

As mentioned in the reply to part (a) above, LRT is now equipped with FSI that comply with relevant legislation and FSD's requirements, and FSD, TD and tunnel operators have drawn up contingency plans and will conduct emergency and fire drills regularly. Therefore, the existing FSI and safety measures of LRT are able to effectively facilitate the safe and timely escape of tunnel users and workers in case of emergency. In fact, the contingency plans functioned effectively during the fire incident that occurred inside LRT on March 8, 2012. All workers carrying out water mains rehabilitation works inside the underground utility chambers followed the emergency procedures and evacuated safely. No one was injured.

If EEAs were to be built to connect the two existing tunnel tubes of LRT, one of the tubes will have to be closed to make room for the works site. Prolonged tube closure will be necessary during the works, which will seriously affect the traffic between Kowloon and the New Territories East.

Ends/Wednesday, March 21, 2012 Issued at HKT 11:59

NNNN

日期:9-3-2012

## 獅隊燒傷單管行車4天

1967年通車的獅子山隧道昨日凌 慶發生地底水管維修工程引起的三級 火警,隧道底下出現逾百米長「火 線」,悶燒9小時,令遺條本港歷 最悠久的隧道「重創」至路面石屎剝 落、鋼筋外露;運輸署決定將起火的 九龍方向南行管道封閉4天,下周一 才局部開放,其間只開放北行管道作 單管雙程行車,交通嚴重受阻。火警 中維修水管的35名水務署外判工 人,由地底經天井爬出,死過翻生。

明報記者 禁方山 林錫禮 黃熙麗

### 潮水管理 周一或重開快線

獅隧現時每天流量約8.9萬架次,本報按 每架車8元隧道費,以南行管道連封4天, 粗略估計交通流量會減少約一半計算,政府 因火營少收約142萬元隧道費。

水務署昨就更換水管工程引起的火警及交通擠塞,向市民致歉,並指在工程前制定的 應急機制發揮作用,令工人可安全疏散,會 評估是否需加强相關機制,火營亦未影響供水。該署指出,工程不涉易燃物料,亦不需要使用明火,起火原因有待調查。

消防處確認水管上的瀝青物料燒着,不排除器材短路或有人違規吸煙,惟起火原因仍在調查。有專家懷疑是工程中遊風機短路或使用火輸引起火醬(詳見A5)。

### 港鐵巴士增加班次

路政署總工程師容建宜表示,火幣的南行 管道被熏黑,外牆有混凝土剝落,鋼筋外 露,慢線損毀更嚴重,地下通道亦燒毀了

60米,需盡快檢查及搶修,盡量於下周一 早上繁忙時間前先重開快線。

運輸署表示,會視乎交通情况在北行管道 實施潮水管理,如上班時間以兩條線出九 龍,下班時間將兩條線改爲往新界方向,已 與巴士公司及港鐵協調增加班次,估計會有 31條巴士線受影響。

. 的士小巴權益關注大聯盟主席黎銘洪說, 估計有超過 10 條紅色及綠色小巴線會受影 響。沙田區讓員鄭楚光指出,市民由沙田區 到九龍東,需轉用大老山隧道,預料車程較 使用獅隧長 10 至 20 分鐘。

### 地底水管瀝青工程起火 火線百米

火簪源於水務署的管道工程。昨凌晨1時半,35名工人乘坐工程車到南行管道,由沙井進入地底2米空間,維修管道下3條、每條直徑1.25米的地底水管,包括清除水管而破損的殘舊瀝青,並銷上全新的瀝青布。至3時許,有工人發現起火及濃煙,遂經沙井爬出路面,在濃煙中往九龍方向出口逃生。

消防處於凌晨 3 時 33 分接獲獅隧火警報告,派出多隊煙帽隊入隧道灌救,封閉南北管道。火場位於距管道九龍出口約 200 米,地下火線連綿 100 米,現場濃煙密佈,影響範圍達 300 米,一度湧出隧道外數百米。

火鳖至早上6時18分升爲三級,隧道公司亦重開北行車管道作單線雙程行車,交通嚴重擠塞,車龍一度長2公里;東鐵則加密班次疏導上班人潮,至上午11時才回復非繁忙時間班次。

消防不斷增加人手,由於瀝青被大火燒熔浮在水面,最後決定出動10條喉,以灌土方式在沙井注入化學泡沫灌救,終於昨早11時許控制火勢,並於中午12時許將火救熄,消防事後打開沙井渠蓋灑水降溫,以防地底再冒煙。火鳖共出動140人,派出10隊煙帽隊。

## 重鋪水管瀝青 起火三可能

專家:煙頭短路偸用火槍

### 獅隧三級火 上接A4

獅隧地底三級火原因至今未明,綜合專家 及學者估計,原因可能有三;其一可能地底 工程用具如鼓風機出現短路,引致火警;其 二是可能有工人貪方便,用小型氣體火槍欲 烘軟水管的破舊瀝青,意外燃着瀝靑致一發 不可收拾;其三是有人吸煙引致火警,但真 正起火原因有待消防處調查。

明報記者 陳志偉 馬耀森

水務署駐地盤高級工程師梁炳富昨指出, 獅隧維修地下水管的工序毋須使用明火,故對工程引致火 警亦感疑惑, 暫未能確定是否有人吸煙或電線短路 等引致。

發生三級火的南行獅隧管首,其地底置有3條表面 銷了瀝青、直徑約1.25米的大水管,起火前水務署 聘用的外判商工人正進行水管保養工程,包括清除 水管表面已破損的瀝青,以便鋪上防火性能較佳的 新「瀝青紙」, 距料因此引起火警,

### 學者疑工人貪快 火槍燒軟瀝青

接近水務署的專家估計,可能是一些耗電用具如鼓風機短路,引發火營。因爲修復水管需要重銷瀝青,避免水管外露接觸空氣而加速鏽蝕,爲水管銷上瀝青後,富以鼓風機吹出熱力令瀝青變軟,但鼓風機產生的熱力一般不足以燃點瀝青,若用電設施短路起火,可能點奔製造瀝青紙的物料如紙或布

料,繼面發生大火。

香港教育專業學院建造工程系系主任陳子明指出,火幣由一兩個燈頭引起的可能不大,理由是瀝青燃點不低(高於400℃),他懷疑起火原因可能與有外判工人食快食方便,誤用氣體火槍「燒軟」瀝青。若控制不當,熱力達到「燃點」溫度,便會引發火幣。陳子明又補充,電器短路也有可能引起火幣。

因獅子山隧道内的5條水管是香港供水系統的主要 命脈,水務署昨即時評估,認爲火管對供水影響不 大,但已作兩手準備,若火警影響水管運作,會即 等時關東大雅養水廠的食水以補不度。

### 最老隧道 沒緊急逃生口

全長近1.5公里的獅子山隧道於1967年 通車,是全港歷史最久的一條隧道,防 火設計較落後,大部分雙管道隧道在管 道間均有連接的緊急行人通道,讓乘客火 警時可步行至另一方向的管道逃生,唯獨獅

隧没有此逃生設施。為舒緩有關風險,政府97年在獅 隧兩邊各增設11排消防水雜,每水雜相隔約400米, 以便火警時可阻擋火勢和濃煙蔓延,並爲隧道降溫, 爲乘客爭取逃生時間。

**鋪設在獅隧地底的5條直徑1.25米水管**,是香港供水系統主要命脈之一,負責把食水從沙田濾水廠輸送 九龍。因60年代的旱災,港英政府需要罄由建水管供水給九龍,有說法指政府因此「順便」與建獅隧

由於水管老化,水務署把獅隧內的5條水管納入更換及修復水管工程第2期,工程費用2.23億元,07年底動工,預料今年9月完工,主要爲網造水管內部加設保護層,水管外面重新鋪瀝青防鏽。

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# 岩紅隧失

運輸及房屋局局長鄭汝樺沒有積極推動回購西隧,紓緩紅磡塞車壓力。

### 議員狂轟 促回購西隊

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立法會交通事務委員會主席 鄭家富對於當局需「封管」至少 五天進行維修, 始可重開南行管 道快線,感到十分愕然,認為時 間太長不可接受。他表示,若火 警發生於連接港島及九龍的「命 脈」的紅隧, 必定影響本港經濟 及民生。事件亦反映出全港隧道 車流量不均,希望曾蔭權、運輸 及房屋局局長鄭汝樺「醒吓」, 盡快回購車流較小的西隊,以紓 緩紅隧塞車壓力。他又促請政府 檢討是否需要將隧道管理外判, 並檢討對外判公司及員工的監管 問題。

立法會議員王國興更形容是 次獅隧三級火屬「前所未見」: 焚燒逾九小時更屬失控,若發生 於紅隧必屬災難性,嚴重影響香 港經濟及民生,政府必須盡快交 代及調查事故原因。王更強調相 關事故「可一不可再」,必須全 面檢討隧道設計、結構及防火設 施上有否改善空間。

民主黨立法會議員黃成智亦 要求政府盡快調查及交代事故原 因,並為受影響的新界東等居民 提供完善、暢誦的運輸網絡及交 通安排。他並稱,隧道火警屬極 為嚴重事故、影響深遠、若發生 於繁忙時段,後果更加不堪設 想,要求政府為全港所有隧道谁 行防火措施檢查,以免同類事件 再發生。

### 監管不力 涉多個部門

黃更質疑隧道物料及監管出

現問題,若吸煙為火警主因,管 理公司是否有守則監管員工,不 能在隧道範圍內吸煙,他亦認為 事故牽涉多個部門,但水務署卻 狀似「一力承擔」, 他已立即去 信立法會交通事務委員會,要求 討論今次事件。

理工大學機械及工程學系工 程師盧覺強認為,獅子山隧道雖 然有先天缺陷,但必須研究可行 方法,加裝緊急逃生通道,亦可 **做效普通工業大廋及樓宇**,直接 於隊道頂安裝自動灑水系統。

### 隧道走火警八大須知

- 應先熄掉引擎,留下車匙
- ・ 亮起危險警告燈號
- ◆在安全情況之下離開車輛,留意其他行車線
- 用隧道管道內的緊急電話通知隧道控制中心
- 打破火警鐘玻璃啟動火警鐘
- 站在路學以猿離危險
- 等候隧道職員協助及指示
- 嘗試用隧道管道旁的滅火筒救火,但須避開 濃煙及小心車輛

管道亦 機 次 四 。 伏惟 **亦較窄及彎度大**伙,路面有不少性依山而建的先 路面有不少暗斜位山而建的先天缺陷 凹凸不正令隧道:

## 設 有水簾 沒 有啟

士須沿管道逃生無緊急逃生通道

・「「一旦發生火警、被手、一旦發生火警、被手、一旦發生火警、被手が

但今次事件

缺四悠防 十久煙隧

也 也不 【本報訊】

但原來 底

只道

r,除路面危势。 -五年歷史, 人的行車隧道

發生

隧為 防地陷 面阱

道依山上火警的

而南 本

過,即使〇五年六月廿九日察系統。雖然水簾設立十夕壁更换防火圍板,以及改美 品 兩距 管離 此 裝設 。雖然水簾設立十多年,但從未用防火圍板,以及改善交通管制及監阻止火勢蔓延,○一年更將管道內裝設十一排水簾系統,若一旦發生 遠 ,當局於九七年將隧道劃分为遼,無法加建緊急逃生通道,縣於地形問題,兩行車管道 為 道

而且管槽屬密閉空間,

九七八年啟用,全長一點四二脚隧的南北行管道分別於一4,即使有水簾亦無用武之地。

二公里

最早的行車隧道及首條連

平內

動 7濃煙滿5

作用不大。司發言人表示內濃煙滿布, 電子線山 易 級,但有關空間狹-四隧道興建時地下至 香 燃,只是遇到高溫才會變成易燃因為鋪在水管表面的瀝青在低溫他說,水管復修工程引致火警非 管線專業學會理 **小預** 前 · 留空間 理事黃 落 去,是敬則 五,要鳥( 現現代的) 別別指,實 常罕 下

隧 布 道 示,今次事件情况特t,水簾仍舊沒有啟動,水簾仍舊沒有啟動 火 獅 , 水隧管 低管及獅

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### 通車時已符合消防規定

港府於1960年代時開鑿獅子 山隧道,首條雙線行車管道於 1967年開通,其後在隧道旁開 鑿另一條雙線行車管道,並於



■消防員衣服被蒸黑。中通社

1978年開通。因獅子山隧道採用舊式設計、加上兩條管道相隔甚遠,在設計和技術所限下,未能設置貫通兩管道的緊急逃生出口,但通車時已設有合乎規定的消防裝置,符合消防處的規定。

港府隨後於1997年在隧道內裝設全港隧道中獨有的水嚴系統,每條管道各有11道水簾,每個相隔約100米,阻止濃煙及火勢蔓延,讓市民逃生。隧道範圍內設有消防龍頭、滅火筒、抽風系統、火鳖鐘、緊急電話及緊急照明系統等火鳖逃生裝置,隧道管理營辦商亦要聘請註冊消防承辦商定期巡查各類設備。

### 運輸署每3個月提供防火訓練

運輸署發言人表示,隧道管理營辦商會每3個月為隧道職員提供防火訓練,並每半年與消防處進行聯合火醬演習,而營辦商已有清晰的指引,當隧道管道內發生火醬時,隧道職員在發現火醬的源頭後,會因應消防人員要求決定是否需要開動水簾,而過去5年管道內共發生2宗火營,隧道管理營辦商均有啟動水簾裝置。

運輸署發言人表示,獅子山隧道的安全設施已足夠,因應今次火 警是地下水管隧道維修工程引起,有關部門會作出跟進及檢討。發 言人續稱,當局已印製隧道火警指引,當駕駛人士駕駛或乘坐車輛 在隧道內遇上火警時,應在安全情況下離開車輛,並利用管道內緊 急電話通知控制中心,等候隧道職員協助及指示。

## 前消防一哥:瀝青遇火花易燃

香港文匯報訊 (記者 文森) 前消防處處長、消防工程師林振敏指出,瀝青是可燃物品,一旦起火就會散發有毒氣體,但正常情況下,沒有明火並不會燃燒,「任何工程本身都有一定危險存在,但遠方面如果有人能夠做好防火,如我剛才所說,瀝青不是很易燒着,有火花才燒着,防火做好些,例如不抽煙,不要用明火,這些環境之下,做這些工程危險性亦不太高。」

### 隊道窄滿濃煙/救火較困難

獅子山隧道發生3級火,消防員花了約9個小時才將火警救熄,這令人擔心隧道内的 防火安全。林振敏指出,由於現場環境狹窄及充滿濃煙,消防員人內救火比較困難。

林振敏指出,火警發生於隧道地底,受制於現場環境,要較長時間救熄不足為奇,「首先來說,入口比較窄,不能用大量消防員救火。另一方面,內裡的煙及熱(力)聚積起來,比較困難些。每走一步,不論是手或腳,都看一看有沒有雜物阻到,所以每行一步時都要一定時間。」

## 責未全力搶修 亦無公布肇因

# 議員指獅燧五天可修復

經歷通車以來最嚴重 火劫的獅子山隧道,當局 在評估損毀程度後,預計 最快兩周後才可重開全部行 。有立法會議員批評當局辦事

車綫。有立法會議員批評當局辦事 不力,如肯全力搶修,相信可在五 天內修妥;又指當局沒有向公眾交 代清楚事件,凸顯官僚作風。

### 記者:朱宸王

**扩**隧因火警封閉一條行車管道,運輸署預計要兩周才全綫開放,受到立法會議員猛烈批評。運輸署署長黎以德昨稱,在爭取下周一重開往九龍管道快綫後,便會有三條行車綫可供使用;經各部門詳細評估,為安全起見,預料最快要兩周後,才可重開所有行車綫。

立法會交通事務委員會主席鄭家富指出,獅隊是新界區其中一個交通樞紐,每日約有七八萬

人次使用,當局應全力搶修,不應為慳錢將工作 外判。他相信若當局肯投放資源,五天內可全綫 開通。他又批評當局沒有公布事故原因,凸顯官 僚作風,會在下次交通事務委員會要求政府交代 事件。

· 立法會議員涂謹申亦認為,官員要問責及有 透明度,今次事件當局至少要了解清楚問題,盡 快公布,讓公眾提出意見,作出改善。

水務署表示,署方檢查水管損毀情況,發現 三條水管外面保護層全受火警影響,已委派工程 顧問公司,全面調查起火原因及維修。

### 60米管道石屎剝落露鋼筋

路政署指出,經檢查發現慢綫損毀嚴重,有 六十米長地下管道石屎剝落及鋼筋外露,而快綫 亦有數處地方損毀;雖然路面沒有下陷,署方正 加緊重修快綫受損毀路段。至於發生火警的管道 昨仍然封閉,工程人員忙於搶修。

昨日為獅隧實施單管雙程行車首天,早上繁 忙時間沙田往九龍方向明顯多車,往沙田方向則 暢順。由於有駕駛人士轉用,大老山隧道一度出 現車龍,龍尾排至一點五公里外沙田石門。傍晚 下班繁忙時段,獅隧往沙田方向未見擠塞。 S. C. M. P.

## Lion Rock Tunnel repairs will take two weeks

The Kowloon-bound carriageway of Lion Rock Tunnel will be fully reopened in two weeks. The duallane carriageway was closed after a fire on Thursday damaged 60 metres of the underground drainage tube beneath the tunnel.

## 南行管道今起重開快綫

獅子山隧道南行管道,今日將開通一條快 *綫,運輸署將實施潮水式行車疏導交通,車速* 双 限制亦由平日的七十公里,减至五十公里,而 ፲ 隧道兩邊出入口亦會有改道措施。路政署預計整

條南行管道最快下周四才可完成復修。

**運**輸署首席運輸主任伍樹雄表 示,獅子山隧道受火警影響 的南行管道快綫,今晨六時將會重 開,並分三個時段實施「潮水式行 車」安排,在早上六時至上午十一 時,南北行管道各有一條行車綫出 九龍,但市民要留意,南行管道只 開放快錢往九龍,出隧道後亦只可 到黄大仙或觀塘方向;前往九龍塘 或旺角的車輛,應選擇北行管道往 九龍方向行車錢。出九龍的駕駛人 士要在收費廣場決定目的地。

-3 **₹** 

至於早上十一時至午夜十二時,

北行管道雙綫改往沙田方向,只剩 下南行管道快綫往九龍;午夜後至 翌晨六時,北行管道回復單管雙程 行車,南行管道則會全鏈封閉,以 加快維修。

### 車速限制50公里

伍樹雄稱,因南行管道慢綫仍 有復修工程,快綫重開後車速限制 由平日七十公里,减至五十公里, 呼籲駕駛人士留意車速及隧道職員 指示,而兩邊隧道出入口前有多個 臨時交通標誌指示最新改道措施。

路政署總工程師(新界東)容建 宜表示,該署事發後一連三天,二 十四小時從未間斷進行復修工作, 最高峰同時有六十名員工搶修,今 晨可重開南行管道快綫,惟南行管 道慢綫有六十米長的水管管道嚴重 損毀,出現石屎剝落、鋼筋外露情 况,工程人員已於管道沙井間切割 多兩個十二平方米洞穴方便人員維 修。由於復修工作繁複,預計最快 也要在三月二十二日、即下周四才 可完成復修。

運輸署呼籲市民, 盡量使用港鐵 服務及途經城門隧道及大老山隧道 的巴士服務,亦要留意運輸署緊急 事故中心發放的最新交通消息。因 應獅隧情況,港鐵今晨續加強觀塘 錢及東鐵錢服務,分別於早上七時 及七時十五分,提早實施繁忙時段 班次, 較平日提早約十五分鐘,約 兩至三分鐘一班車。



快線先通慢線續封 復修鋪物料不加強耐熱力

香港文匯報訊 (記者 轟曉輝) 獅子山隧道往九龍方向的南行管道日前發生 一場大火,導致來往九龍及新界的交通秩序大亂,消防員灌救9小時才將火 警救熄,南行管道需即時封閉搶修。運輸署指出,經多日搶修後,南行管 道南行快線的復修工程將於今晨6時前完成,並於今晨6時起重開,慢線則 繼續封閉。同時實施潮水式行車安排,包括早上繁忙時段2條管道合共開放 3條行車線,以疏導車輛。路政署總工程師容建宜表示,由於維修工程旨在 復修管道內損壞部分,故不會以更耐熱的防火物料復修。

### 慢線損毀60米 60人搶修

容建宜指出,日前的大火令獅子山隧道 南行管道內的地下水管外牆,出現石屎剝 落及鋼筋外露情況,由於快線只有4處地方 受損,料將於今晨6時前完成復修,並重新 開放。至於慢線方面,石屎剝落及鋼筋外 露情况十分嚴重,且波及範圍長達60米, 需要大批工程人員使用大量臨時支架進行 24小時搶修,最高峰時多達60名工人同時 工作。容建宜指出,由於獅子山隧道內, 每60米才有一個僅能容納1名工人出入的沙 井口通往地下水管,而今次慢線受損的60 米範圍內卻沒有任何沙井口,故需在當中 開鑿兩個6米乘2米的出入口,方便維修人 員出入及工具進出,期望下周四(22日)前完 成整項工程。

### 加強防火設備須周詳計劃

他表示,快線重開後,有足夠措施分隔 行車路與工作空間,不會對慢線復修工程 **造成影響**,而整項復修工程鋪設的物料, 耐熱能力與原來物料相若,他解釋,加強 防火設備要有周詳計劃,現階段最重要是 復修管道內受損地方。

運輸署首席運輸主任伍樹雄指出,由今 日起,周一至周六上午6時至上午11時,北 行管道2條線會繼續採取南北雙線行車措 施,但南行線只能往九龍塘,而不能直達 黄大仙;駕駛人士可使用南行管道剛重放

· 的快線,往包括黃大仙在內的九龍所有目 的地,且必須在收費廣場選定行車線。至 於上午11時至午夜12時期間,南行管道的 行車措施不變,北行管道雙線俱為北行線 (見表)。

### 巴士或加班 港鐵續加強服務

伍樹雄指出,在實施有關臨時交通安排 的同時,獅子山隧道的最高行車時速將由 每小時70公里減至50公里。他又預計,獅 子山隧道附近的交通將繼續繁忙,呼籲駕 駛人士盡量避免使用該隧道。另一方面, 巴士公司會在有需要時加密班次,港鐵亦 將繼續加強東鐵線及觀塘線的服務。

### 獅隧潮水式行車安排

de 4 disc						
〇上午6時至上午11時						
北行管道快線:開放南行往九龍 <del>塘</del>						
<b>北行管道慢線:開放北行往沙田</b>						
南行管道快線:開放南行往九龍方向						
南行管道慢線:封閉						
○上午11時至午夜12時						
业行管道快線:開放业行往沙田						
<b>业行管道慢線:開放</b> 业行往沙田						
南行管道快線:開放南行往九龍方向						
南行管道慢線:封閉						
〇午夜12時至翌日上午6時						
<b>业行管道快線:開放南行往九龍方向</b>						
北行管道 <b>慢</b> 線:開放北行往沙田						
南行管道快線:封閉						
南行管道慢線:封閉						
토립						
〇上午6時至午夜12時						
- 北行管道快線:開放北行往沙田						
北行管道慢線:開放北行往沙田						
南行管道快線:開放南行往九龍方向						
南行管道慢線:封閉						
午夜12時至翌日上午6時						
北行管道快線:開放南行往九龍方向						
北行管道慢線:開放北行往沙田						
南行管道快線:封閉						
南行管道慢線:封閉 資料來源:運輸署						

製表:香港文匯報記者 聶曉輝

## 開三線一日三變 市民捉錯路



「谷爆 | 大老山隧道。上周四發生三級火後封 的獅隊南行管道,昨日重開快線,令獅隊共有三線來回 行車。由於大批市民為避開塞車而改用其他道路,獅隧早上及傍晚繁忙時間,行 車大致暢順,反而大老山隧道則被逼爆,塞車情況較平日嚴重、昨晨出現逾兩公 里長車龍。有受影響市民促當局加快搶修,立法會議員亦批評獅隧「封管」兩周 擾民,要求政府提高透明度,交代事故進展。

搶修,昨日只維持三線行車,獅隊實施「一日三 變」的潮水式行車,將重開的南行管道快線與北 行管道的一條線,安排同方向行車。事隔五日, 但南行管道離九龍方向出口約一百米處,牆身仍 見重黑痕迹。

### 大隊車龍渝兩公里

昨晨繁忙時間,雙線出九龍方向無出現大塞 車、但疑因行車方向有異,分別往黃大仙及九龍 塘,部分駕駛者駛渦收費亭後入錯線,需慌忙煞 車或冒險切線,險象環生,幸無釀車禍。

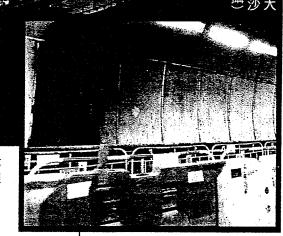
由於不少駕駛者為避過塞車,預早出門或改 行其他道路,獅隧雖然未見塞車,但大老山隧道

原有四線行車的獅隊,因南行管道慢線仍在 卻因車輛流量突然大增而加劇塞車情況,昨晨七 時許,曾出現逾兩公里車龍,龍尾伸延至石門迴 旋處。大老山隧道發言人稱、車龍的確比平日 長,公司已因應交通情況加派人手維持秩序。

### 獅隊被轟搶修緩慢

有受影響市民促當局不要再「歎慢板」, 浸會 大學姓郭女生認為,當局搶修及調查進度太慢: 「應該兩、三日就搞掂啦!」售貨員吳小姐則指, 平時廿分鐘的車程,現需多出近一倍時間,她無 奈亦要提早出門。任職文員的吳小姐指, 交通雖 不算擠塞,但當局應盡快完成搶修。

另外,立法會交通事務委員會主席鄭家富批 評,兩周的搶修獅隧時間,十分擾民,政府又遲



膏南行管道慢線昨繼續封閉搶修,牆 上可見熏黑痕迹。

遲無交代事故進展,透明度低:委員會已要求有

關部門開會檢討處理同類 事件的程序。沙田區區議 員陳敏娟重申,封管兩周 不能接受,她將與隧道公 司開會商討及提出建議。



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### 獅隧南行快線重開暢順

香港文匯報訊(記者 杜法祖)受 火警影響封閉4日搶修的獅子山隊 道南行管道,昨晨6時重開快線, 當局實施潮水式行車措施,早上2 線出九龍,下午則2線入沙田,車 速由70公里減至50公里。昨上班繁 忙時間,沙田出九龍交通大致暢 順。有沙田居民擔心塞車,特別提 早出門,亦有人改搭港鐵以便掌握 時間;有司機則暫改用其他隧道。 港鐵昨晨亦加強觀塘及東鐵線服務 配合。至昨日黄昏繁忙時間,獅隧 入新界方向行車暢順,出九龍的龍 尾則約1公里長。路政署預計,最 快下周四維修工程完成後,獅隧才 可以全線重開。

獅隊於昨晨6時至上午11時實施潮水式行車措施,南、北行管道各有一條行車線出九龍,北行管道則有一條行車線往沙田;由上午11時至午夜12時,則改為北行管道2線往沙田,南行管道快線出

九龍,而午夜過後,南行管道會 再封閉進行維修。運輸署指昨晨 上班繁忙時間獅隧行亞大致正 常,只是入隧道的車流較緩 提早了少許出現車龍。而在大現 山隧道,昨晨約7時半開始出現車 龍,最長約有2公里,排至近石門 迴旋處。

### 時速70公里減至50公里

有乘坐經獅隧巴士往九龍上班的市民說,獅隊內行車速度雖然由70公里減至50公里,但少了車使用獅隊,所以較平日早抵達九龍。亦有市民表示,比平日提早15分鐘出門口,改乘港鐵上班避免遲到,又說近日港鐵較多人乘坐,要多花幾分鐘等車,但可以接受。

獅隧南行管道上周四凌晨維修地 底水管時引起3級火警,管道嚴重 焚毀,須封管緊急搶修+天,至昨 晨始重開快線。

### The Standard

# Tunnel traffic purrs along on reopening

### Kenneth Foo

Temporary traffic arrangements at fire-hit Lion Rock Tunnel went smoothly on their first day with three of four lanes open to vehicles.

The offside lanes were reopened four days after a fire badly damaged a section of the tunnel.

It was feared a reduced speed limit would result in long queues but the Transport Department said it went well for the most part of yesterday.

A tidal-flow arrangement was imposed from 6am to 11am, with the opening of two lanes Kowloon-bound and one Sha Tin-bound.

This arrangement was reversed from 11am to midnight with the opening of two lanes Sha Tin-bound and one Kowloon-bound.

The speed limit at the tunnel was reduced from 70 kilometers per hour to 50kph.

Traffic officials were on site to advise motorists.

"Traffic in both directions was smooth in the reopened tunnel throughout the day, but was quite busy in the morning rush hour, resulting in a 600-meter queue in the Sha Tin-bound lane," chief transport officer Michael Ng Shihung said.

Several Sha Tin residents opted to take the MTR while some motorists chose to bypass the tunnel and took alternative routes, resulting in congestion along these roads.

As a result, there was a two-kilometer queue to Tate's Cairn Tunnel in the morning, Ng said. The evening traffic ran more smoothly.



It was feared a reduced speed limit would result in long queues at the blaze-hit tunnel. SINGTAO

MTR Corp will continue to run additional services, maintaining waiting times of about two minutes on the Kwun Tong line and about three minutes on the East Rail.

The blaze broke out at about 3.30am on Thursday in a drainage tube below the carriageway and raged across a 60-meter-long section, exposing steel reinforcements.

The fire is believed to have started during maintenance work by Water Supplies Department staff on old water pipes.

There were no injuries.

A department spokeswoman said the damaged lane will remain closed until repairs are completed by March 22.

She could not say exactly when the lane will be fully operational.

staff.reporter@singtaonewscorp.com

### 蘋果日報

【本報訊】獅子山隧 道上星期火警後,目前 南行往九龍方向管道只開 放快線, 慢線因管道損 毁嚴重,復修仍然進行, 預料最快下周四才能開 通。公民力量 12 名成 員,昨約見獅子山隧道 管理公司,要求加快出 九龍方向管道慢線維修工 程,盡快全線開通,又 要求管理公司關注隧道老 化。

### 仍潮水行車

獅子山隧道目前仍 實施潮水式行車,早上6 至 11 時北行管道雙線雙 程行車往九龍,但往南行 方向管道只開放單線行車 往沙田。沙田區議員姚 嘉俊表示,會面期間已 向隧道公司反映,要求 檢查隧道消防設備,檢 討突發事故的應變措施, 希望隧道公司能與政府部 門配合,加快完成維修, 盡快全面重開隧道。

### 怕再有事故

公民力量召集人兼 沙田區議會主席何厚祥希 望,隧道公司加快出九 龍方向管道慢線的維修, 盡快全線開通,「究竟呢 啲事故係咪會不斷發生, 事件火警在維修期間引 起,現場環境太舊,再 有事故點算一。

### 文匯報

## 公民力量倡改善獅隧防火設施

香港文匯報訊(記者 林裕華)獅子山 隧道火警引起公眾關注隧道消防安全、公 民力量昨約見獅子山隧道管理公司信住集 團,了解火警後處理措施及向管理公司提 出改善隧道內設施的建議,又希望隧道公 司配合政府的隧道搶修工程,以期盡快全 面重開隧道。

公民力量10多名成員昨到獅子山隧道行 政大樓,與獅隧管理公司會面。公民力量 交通事務發言人姚嘉俊表示,事故暴露本 港行車隧道存在隱憂,隧道內的防火水簾 在是次火警中未有運作,建議管理公司全 面檢查隧道內消防設備及喉管,盡快更換 陳舊老化的設備,亦建議加快完善通風系 統,並檢視對突發事故的應變措施。

獅隧上周四發生3級火警後,南行慢線



■公民力量成員昨約見獅隧管理公司,了 解火警後處理措施。 公民力量供圖

管道封閉至今,要待維修工程完成後始能 全面重開。姚嘉俊表示,獅隧雖已實施 「潮水式行車管制」,但由於獅隧行車流量 甚高,昨日便達4,000多車次,為市民帶來 不便,故希望隧道公司與政府部門配合, 加快完成隧道維修工程,盡快重開隧道。

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### 太陽報

### 獅隨無逃生道政府懶理

◆本報訊 獅子山隧道三級火引起市民對隧道安全的關注,該隧道是目前全港唯一不設緊急逃生通道的行車隧道,有立法會議員關注當局有否計劃為獅隧加建逃生通道,提升消防安全。但港府表示在獅隧加建逃生通道要長時間封閉行車管道,將嚴重影響交通,更指現時有關的消防裝置已能讓隧道使用者及工程人員迅速逃生,暗示無意加建逃生通道。

運輸及房屋局局長鄭汝樺在回覆議員查詢時表示·除獅隧外·本港其他隧道的兩條行車管道之間均設有緊急逃生通道,由於獅隧兩條行車管道在不同時期建造,因此未有興建逃生通道連接管道。

她又指·獅隧已設有符合法例及消防處規定的消防裝置·現時有關裝置已能有效讓隧道使用者及工程人員迅速逃生:而且加建逃生通道須長時間封閉其中一條行車管道以進行工程·將會嚴重影響往返九龍及新界東的交通·意味當局無意為獅隧加建逃生通道。

此外,獅隧設有的十一個水簾裝置,於本月的大 火中並沒有開啟,鄭汝樺解釋,水簾裝置是用作隔離 及防止火勢蔓延,由於今次火警的源頭是位於行車管 道地底的公共設施管道,水簾的射水不能控制地底的 火勢,故隧道營辦商根據現場消防人員意見,沒有開 啟水簾。



通道問題。 (資料圖片) ●有立會議員關注獅隧無逃生