

**Legislative Council Panel on Transport
Report on the Bus Fire/Smoke Incidents on 10 December 2008**

Purpose

This paper reports on the preliminary findings of the investigation on the three franchised bus fire/smoke incidents on 10 December 2008, and the immediate follow-up actions taken to safeguard against similar incidents.

The Three Bus Fire/Smoke Incidents on 10 December 2008

2. On 10 December 2008, fire broke out on two franchised buses of Citybus Limited (“CTB”) and The Kowloon Motor Bus Co (1933) Ltd (“KMB”), and smoke emitted from another CTB bus. Details of the three incidents are summarized below:

(a) Incident 1 : CTB bus fire incident on Stubbs Road

Bus Company & Route No.	CTB Route No. 6
Make and Model	Dennis Dragon double decker
Bus age	11.5 years
Date of last monthly inspection	13 November 2008
Date of last annual inspection	28 January 2008
No. of passengers on board	30
No. of casualties	0
Cause of fire (preliminary)	Failure of alternator mounting bracket

(b) Incident 2 : KMB bus fire incident on Queen’s Road East

Bus Company & Route No.	KMB Route No. 113
Make and Model	Volvo B9TL double decker
Bus age	2.5 years
Date of last monthly inspection	14 November 2008
Date of last annual inspection	6 March 2008
No. of passengers on board	70
No. of casualties	0
Cause of fire (preliminary)	Failure of alternator bearing

(c) Incident 3 : CTB bus smoke incident on Cotton Tree Drive

Bus Company & Route No.	CTB Route No. 40
Make and Model	Olympian MKII double decker
Bus age	12 years
Date of last monthly inspection	21 November 2008
Date of last annual inspection	24 September 2008
No. of passengers on board	40
No. of casualties	0
Cause of smoke (preliminary)	Rear axle casing broken

Preliminary Findings and Immediate Follow-up Actions

3. The Transport Department (TD) is very concerned about the three incidents and has instructed both KMB and CTB to investigate the causes of the incidents and submit investigation reports to TD for assessment. TD has also examined the maintenance records of the three buses involved in the incidents.

(a) Incident 1: CTB bus fire incident on Stubbs Road

4. The preliminary investigation revealed that the fire was caused by the sudden failure of the alternator mounting bracket of the bus concerned. This led to the failure of the alternator bearing and subsequently caused the fire. Examination of the maintenance records of the bus revealed that the alternator mounting bracket had no abnormal symptoms during the last monthly inspection (13 November 2008) and last annual inspection (28 January 2008).

Immediate follow-up actions

5. On the instruction of TD, CTB:
- has commenced checking the alternator mounting brackets of all buses of the same model (222 buses). The fleet check will be completed within December 2008. So far, 94 buses have been checked and no abnormality has been found; and
 - is consulting the bus/engine manufacturer on whether the design of the mounting bracket can be improved further.

(b) Incident 2: KMB bus fire incident on Queen's Road East

6. The preliminary investigation revealed that the sudden failure of the alternator bearing of the bus concerned resulted in abnormally high temperature and eventually the fire. Examination of the maintenance records of the bus revealed that the alternator bearing had no abnormal symptoms during the last monthly inspection (14 November 2008) and annual inspection (6 March 2008).

Immediate follow-up actions

7. On the instruction of TD, KMB:

- has completed checking the alternator bearing of all buses of the same model (64 buses) to ensure their normal functioning. No abnormality has been found; and
- is consulting the bus/engine manufacturer on the need for earlier replacement of the alternator bearing.

(c) Incident 3: CTB bus smoke incident on Cotton Tree Drive

8. The preliminary investigation revealed that the axle casing of the bus concerned had broken, causing a loss of the lubricant oil in the axle. The shortage of lubricant oil generated excessive heat and then smoke. Examination of the maintenance records of the bus found that the rear axle was repaired on 19 September 2008 and no lubricant leakage was found in the last monthly inspection (21 November 2008).

Immediate follow up actions

9. On the instruction of TD, CTB:,

- has commenced checking the axle casing of all buses of the same model (462 buses). The fleet check will be completed by mid January 2009. So far 106 buses have been checked and no abnormality has been found.

10. The preliminary findings of the investigations do not suggest that the fire/smoke incidents were due to maintenance deficiency. KMB and CTB will submit full investigation reports on these incidents to TD. TD will follow up with the operators on further improvements required taking

account of the findings of the full investigation reports, as well as the advice of the bus/engine manufacturers.

Preventive Measures

11. At present, all franchised buses that provide service to passengers must meet the safety requirements under the law and pass TD's stringent inspections. One of the requirements is that all buses should be provided with emergency exits on both the upper and lower decks, and must meet the height and width requirements of the passenger gangways to facilitate safe evacuation of passengers during emergency situations. Every new bus model has to undergo type approval by TD to ensure that its design and construction comply with the regulatory and safety requirements before it is put into service.

12. In addition, all bus operators have taken the following measures to safeguard against smoke/fire incidents –

New Buses :

- (a) to ensure hoseless design configuration in the engine compartment as far as practicable;
- (b) to include better fire retardancy standard in materials specification; and
- (c) to adopt proven designs against potential fire hazards as far as possible;

Existing Buses :

- (a) to re-route hoses, cables and other heat-susceptible components away from heat sources as far as practicable;
- (b) to replace critical components that might become potential fire hazards on failure according to the maintenance schedule;
- (c) to equip protective sleeve for oil hoses/electrical cable as and when required;
- (d) to review potential fire/smoke hazards and make modifications via internal feedback and modification trials; and
- (e) to issue maintenance notices advocating maintenance best practice and procedures that help to safeguard against fire hazards in an ongoing manner.

13. Every serving bus has to undergo annual examination by TD to ensure its safety and roadworthiness. Furthermore, TD conducts random spot checks to ensure that the buses are maintained properly. The fire-fighting equipments installed in the buses are examined during these annual and spot checks to ensure that they are in good condition and function properly. TD closely monitors the servicing and maintenance programmes of the franchised buses and holds regular meetings with the bus operators to discuss bus examination results and, where appropriate, to formulate measures to enhance bus safety.

14. On top of ensuring the standards of buses, all operators also provide different types of training to their new and serving bus captains to enhance their safety awareness. Procedures in handling emergency and evacuation of passengers are compulsory parts of the training programme which includes not only classroom training but also practical drills. The emergency handling procedures, such as steps for bus captains to facilitate safe evacuation of passengers from a bus on fire, are listed in the bus captains' handbooks/circulars. The bus operators review and enhance the handbooks/circulars from time to time.

Advice sought

15. Members are invited to note the content of this paper.

Transport and Housing Bureau
Transport Department
December 2008