For discussion **FCR(2009-10)11**
on 8 May 2009

ITEM FOR FINANCE COMMITTEE

HEAD 45 – FIRE SERVICES DEPARTMENT
Subhead 603 Plant, vehicles and equipment
New Item "One replacement rapid intervention vehicle R41"
New Item "Three replacement turntable ladders F135, F136 and F137"

Members are invited to approve the following new commitments for the Fire Services Department –

(a) a new commitment of $10,295,000 for procuring a replacement Rapid Intervention Vehicle; and

(b) a new commitment of $33,873,000 for procuring three replacement 50-metre Turntable Ladders.

PROBLEM

The existing Rapid Intervention Vehicle (RIV) R41 and three existing 50-metre Turntable Ladders (TLs) F135, F136 and F137 have been in use for more than 11 years and 13 years respectively. We need to replace them with new vehicles equipped with enhanced features to maintain the fire-fighting and rescue capabilities of the Fire Services Department (FSD).

PROPOSAL

2. The Director of Fire Services (D of FS), on the advice of the Director of Electrical and Mechanical Services (DEMS) and with the support of the Secretary for Security, proposes to replace RIV R41 by a new RIV; and TLs F135, F136 and F137 by three new TLs, all with enhanced fire-fighting and rescue capabilities.

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JUSTIFICATION

Rapid Intervention Vehicle

3. Commissioned in 1998, RIV R41 is currently deployed at the Sub Airport Fire Station of the Airport Fire Contingent (AFC) to respond to emergency calls, e.g. aircraft accidents, fuel spillage on ground from aircraft, etc. at the Hong Kong International Airport (HKIA). Its main function is to prevent the spread of fire by applying a large quantity of extinguishing agent to the aircraft accident scene within a very short period of time, and to put out an incipient fire.

4. The existing RIV has been in use for more than 11 years. While FSD is able to prolong the use of RIV R41 with regular maintenance, it has become increasingly difficult and costly to maintain the vehicle in good operating condition. The manufacturer has already ceased production of this model and compatible spare parts are difficult to find in the market. The annual maintenance cost has increased from $246,000 in 2005-06 to $277,000 in 2008-09.

5. To better meet the high safety standard of HKIA and uphold the status of Hong Kong as a pre-eminent aviation hub, we propose to procure a replacement RIV with the following enhanced features –

(a) a more powerful roof foam monitor with longer flow range of up to 90 metres, as compared with 75 metres of the existing RIV;

(b) the on-board water and foam concentrate capacities will both increase by 50%. The former will increase from 6 000 litres to 9 000 litres and the latter from 720 litres to 1 080 litres; and

(c) greater manoeuvrability in poor weather conditions and rough terrain with a 6 x 6 wheel-drive, as compared with the 4 x 4 wheel-drive of the existing model.

A table comparing the different features of the existing RIV R41 and the proposed RIV is at Enclosure 1.

Encl. 1

Turntable Ladders

6. Commissioned in 1996, the three 50-metre TLs F135, F136 and F137 are currently deployed at Lei Muk Shue, Chai Wan and Kwun Tong Fire Stations respectively. Their main functions are to carry out fire-fighting and rescue operations at a height and work as surveillance towers in old districts with narrow streets.

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7. The existing three 50-metre TLs F135, F136 and F137 have been in use for more than 13 years. It has become increasingly difficult and costly to maintain them in good operating condition. The manufacturer has ceased to produce some of the spare parts like hydraulic pumps for the ladder operation and there are also no compatible spare parts in the market. The annual maintenance costs for the three TLs have been increasing in the past years, with breakdown as follows –

TL	**Annual maintenance cost ($)**	
	2005-06	2008-09
F135	331,800	389,000
F136	313,390	414,400
F137	344,050	402,400

8. To meet the operational requirements of FSD, we propose to procure three replacement TLs with the following enhanced features –

(a) a rescue cage of load capacity up to 270 kg to enhance life rescue capability at a height. This is a new feature as compared with the existing model;

(b) a built-in telescopic water pipe on ladder sections to eliminate the need of laying a water hose on ladder sections for the supply of water to the monitor at the ladder top, which in turn enhance the operational efficiency. There is no such built-in device in the existing model;

(c) an electronic remote-controlled water monitor to facilitate the movement of water jet at the ladder top, as compared with the existing manual-controlled one; and

(d) the monitoring of ladder movement by a computerised system instead of by manual operation to avoid over-loading and turnover and thus enhancing safety of the fire personnel.

A table comparing the different features of the existing TLs and the proposed TLs is at Enclosure 2.

Encl. 2

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

Rapid Intervention Vehicle

9. On the advice of the DEMS, D of FS estimates that the non-recurrent cost of procuring a replacement RIV installed with the necessary fire-fighting and communication equipment is $10,295,000. The detailed breakdown is as follows –

		$'000
(a)	Basic vehicle	8,085
(b)	Fire-fighting and communication equipment on board the RIV	494
(c)	Payment to Electrical and Mechanical Services Trading Fund (EMSTF) for project management and acceptance test	858
(d)	Contingency (10% of items (a) and (b) above)	858
	Total	**10,295**

10. On paragraph 9(a) above, the expenditure of $8,085,000 is for procuring the basic vehicle, which is designed and built as an integrated unit comprising the chassis, engine, body work and foam making system.

11. On paragraph 9(b) above, the expenditure of $494,000 is for replacing the fire-fighting and communication equipment on board of the existing RIV that has reached the end of the normal serviceable life. The amount does not include the cost of equipment on board the existing RIV which is still in serviceable condition. The relevant equipment will be transferred to the replacement vehicle upon its commissioning.

12. On paragraph 9(c) above, the expenditure of $858,000 is for payment to EMSTF for providing project management services, including the preparation of tender, evaluation of tender bids received, and performance of the acceptance test of the replacement vehicle.

13. The estimated cash flow is as follows –

Financial Year	**$'000**
2009 - 10	4,118
2010 - 11	6,177
Total	**10,295**

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Turntable Ladders

14. D of FS estimates that the total non-recurrent cost of procuring three replacement 50-metre TLs with the necessary on-board fire-fighting and communication equipment is $33,873,000. The detailed breakdown is as follows –

		Unit cost $'000	Total cost $'000
(a)	Basic vehicle	8,925	26,775
(b)	Fitting-out, accessories, communication system, training, acceptance test, etc.	893	2,679
(c)	Contingency (15% of items (a) and (b) above)[Note 1]	1,473	4,419
	Total	**11,291**	**33,873**

15. On paragraph 14(a) above, the expenditure of $26,775,000 is for procuring the basic vehicles as assembled units comprising the chassis, ladder, cabin and other components.

16. On paragraph 14(b) above, the expenditure of $2,679,000 is for the expenses on locker fitting-out works, replacement of communication equipment on board and accessories, training, acceptance test, initial spare parts, etc. The amount does not include the cost of equipment on board of the existing TLs which is still in serviceable condition. The relevant equipment will be transferred to the replacement TLs upon their commissioning.

17. The estimated cash flow is as follows –

Financial Year	**$'000**
2009-10	340
2010-11	13,549
2011-12	16,936
2012-13[Note 2]	3,048
Total	**33,873**

/**Recurrent** .....

Note 1 As the proposed new 50-metre TLs are the first batch of TLs equipped with computer-controlled ladders, a higher level of contingency, i.e. 15%, is required for the provision of modification works (e.g. the installation of lockers, stowage equipment), additional special maintenance equipment and advanced training upon the commissioning of the TLs.

Note 2 The cash flow requirement in 2012-13 is for the residual payment in case of outstanding defects and procurement of additional spare parts to be ordered based on the operational experience gained after the commissioning of the TLs in 2011.

Recurrent Expenditure

18. The annual recurrent costs of the existing RIV and three TLs are $307,200 and $1,290,800 respectively, including maintenance and fuel costs. The proposed replacements will not give rise to any additional recurrent expenditure. D of FS will deploy the existing staff to man the replacement vehicles and no additional staff will be required.

IMPLEMENTATION PLAN

19. We plan to procure the replacement RIV and the three replacement TLs according to the following timetable –

	Activity	**Target completion date**	
		RIV	**Three TLs**
(a)	Design and preparation of tender specifications	June 2009	June 2009
(b)	Tendering and award of contract	December 2009	December 2009
(c)	Construction and delivery of vehicle	January 2011	June 2011
(d)	Testing, training and commissioning of the vehicle	March 2011	August 2011

PUBLIC CONSULTATION

20. We consulted the Legislative Council Panel on Security on the proposal on 3 March 2009. Members had no objection to the proposal.

BACKGROUND

Rapid Intervention Vehicle

21. The AFC of FSD is responsible for fire-fighting and emergency rescue in aircraft accidents at HKIA and its surrounding waters and area. Currently, there are four RIVs, apart from other appliances, in AFC's entire airport rescue and fire-fighting fleet.

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Turntable Ladders

22. TLs are first-line fire appliances, which form an integral part of the basic deployment for all No.1 alarm fires or above. At present, there are 25 TLs in FSD's fleet, of which 16 units have a maximum working height of 37 metres. The remaining nine units can reach 50 metres or above.

Security Bureau
April 2009

Enclosure 1 to FCR(2009-10)11

Features of the existing RIV R41 and the proposed RIV

Feature	Existing RIV R41	Proposed RIV
(a) Flow range of roof foam monitor	75 metres	90 metres
(b) Foam discharge rate	4 500 litres per minute	6 000 litres per minute
(c) On-board water capacity	6 000 litres	9 000 litres
(d) Foam concentrate capacity	720 litres	1 080 litres
(e) Vehicle chassis type	Two axles 4 x 4 wheel-drive	Three axles 6 x 6 wheel-drive
(f) Engine type	Pre-Euro	Euro III [Note]

[Note] DEMS advises that only Euro III engine is available in the market for this type of fire appliance.

Enclosure 2 to FCR(2009-10)11

Features of the existing and the proposed TLs

Feature	Existing TLs F135, F136 and F137	Proposed TLs
(a) Rescue cage	No such provision	A rescue cage of load capacity up to 270 kg is provided to enhance life rescue capability at a height
(b) Permanent telescopic water pipe on ladder sections	No such provision	A built-in telescopic water pipe is provided to enhance operational efficiency by eliminating the need of laying a water hose on ladder sections for supply of water to the monitor at the ladder top
(c) Water monitor	Manual-controlled type	Electronic remote-controlled water monitor
(d) Engine type	Euro I	Euro V
