For discussion **FCR(2012-13)78**
on 15 March 2013

ITEM FOR FINANCE COMMITTEE

HEAD 45 – FIRE SERVICES DEPARTMENT
Subhead 603 Plant, vehicle and equipment

Members are invited to approve a new commitment of $10,651,000 for procuring a new Jackless Snorkel to replace the existing Jackless Snorkel R14.

PROBLEM

An existing Jackless Snorkel (JS) (fleet number R14) of the Fire Services Department (FSD) has exceeded its normal serviceable life.

PROPOSAL

2. The Director of Fire Services, on the advice of the Director of Electrical and Mechanical Services and with the support of the Secretary for Security, proposes to replace the existing JS R14 with a new one in order to maintain the fire-fighting and rescue capability of FSD for the Hong Kong International Airport.

JUSTIFICATION

Functions of JS

3. JS is a specialised vehicle of the Airport Fire Contingent (AFC) of FSD. The JS R14 proposed for replacement has been in service since 2004 and is currently deployed at the Main Airport Fire Station[1]. Its special installations and main functions are as follows –

/(a) …..

[1] There are two airport fire stations, namely the Main Airport Fire Station near the South Runway and the Sub Airport Fire Station near the North Runway.

(a) the boom of the JS is equipped with a piercing nozzle that can pierce the aircraft's fuselage and discharge water or foam to control or extinguish the fire inside an aircraft; and

(b) the vehicle is specially designed to allow its boom to be elevated while the vehicle is in motion. The hydro-chem nozzle installed on the boom can discharge water, foam, dry powder or fire extinguishing gas to extinguish fires at various parts (particularly those in high places) of the aircraft.

Need to Replace the Existing JS R14

4. FSD proposes to replace the existing JS R14 on the following grounds –

(a) Expiry of serviceable life

The normal serviceable life of JS is eight years. According to the inspections and assessment of the Electrical and Mechanical Services Department (EMSD) on the JS R14 in 2012, it is estimated that the vehicle could remain in service until the commissioning of the new JS in 2015. However, FSD has to commence the replacement work as soon as possible. If the JS R14 remains in service for an unduly long period of time after the end of its normal serviceable life, the frontline fire-fighting/rescue operation may be adversely affected.

(b) Frequent repair and increase of maintenance cost

The major parts of the JS R14 such as engine, gearbox and electrical controlling device are ageing. It is necessary to carry out repair and maintenance more frequently to keep them in good operating conditions. The annual maintenance cost of the JS R14 in 2012 was about $270,000, which is 35% higher than the average annual maintenance cost of $200,000 at the time of its initial operation. It is anticipated that the maintenance cost of the JS R14 will continue to increase. It will hence not be cost-effective to continue incurring maintenance costs for the JS R14.

/**The** …..

The proposed JS

5. We propose to procure one new JS for replacing the JS R14. The specifications and installations of the new JS, which will largely be the same as those of the existing JS R14, will be able to meet international standards. A more environmental-friendly Euro V engine will be used. The major specifications and installations of the new JS are highlighted below –

(a) to provide different types of fire extinguishing media, there will be a water tank and a foam tank with capacity of not less than 6 000 litres and 720 litres respectively, and the vehicle will also be able to carry 250 kg dry powder and 200 kg specific fire extinguishing gas;

(b) there will be a boom capable of turning from side to side, with its working height of not less than 15 metres and horizontal working distance of not less than 10 metres, for dealing with fire incidents in different parts of an aircraft;

(c) the boom will be equipped with the following installations –

(i) Piercing Nozzle

capable of piercing the aircraft's fuselage and discharging water/foam inside the aircraft, with a maximum water discharge rate of not less than 950 litres per minute;

(ii) Hydro-chem Nozzle

capable of discharging water, foam, dry powder or fire extinguishing gases in various angles, with a maximum water discharge rate of not less than 3 000 litres per minute;

(iii) Thermal Imaging Camera, Closed Circuit Television System and Spotlight

capable of detecting the fire source inside the aircraft, providing images of the fire incident and sufficient illumination respectively, so as to assist in monitoring the fire situation and carrying out fire-fighting and rescue operation; and

(d) the boom can be operated[2] while the vehicle is in motion to ensure the swift performance of fire-fighting operation.

/6. …..

[2] Other types of fire appliances need to stop and be lifted slightly with jacks (i.e. jacked up) before operating their booms.

6. Upon commissioning of the new JS, FSD will assess the conditions of the existing JS R14 with a view to considering whether it should be deployed as an operational reserve vehicle when another JS is under maintenance and repair.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

7. The total non-recurrent cost of procuring a new JS, together with the necessary facilities on board, is estimated to be $10,651,000. The detailed breakdown is as follows –

		$'000
(a)	Basic vehicle and the fire-fighting equipment required on board	8,875
(b)	Payment to Electrical and Mechanical Services Trading Fund (EMSTF)	888
(c)	Contingency (10% of items (a) above)	888
	Total :	**10,651**

8. On paragraph 7(a) above, the estimate of $8,875,000 is for procuring the basic vehicle which will be an assembled unit comprising the chassis, cabin, booms and other components. The amount does not include the cost of communication system as the system on the existing JS R14 is still in serviceable condition, and can be transferred to the replacement JS for use upon its commissioning.

9. On paragraph 7(b) above, the estimate of $888,000 is for payment to EMSTF for project management and acceptance test.

10. On paragraph 7(c) above, the estimate of $888,000 represents about 10 % contingency on item 7(a).

/11. …..

11. The estimated cash flow requirement is as follows –

Year	**$'000**
2013 - 14	533
2014 - 15	4,260
2015 - 16	5,858
Total :	**10,651**

Recurrent Expenditure

12. FSD estimates that the total annual recurrent cost of the new JS will be about $230,000 (including maintenance cost of $200,000 and fuel cost of $30,000), which is lower than the annual recurrent cost of about $300,000 for the existing JS R14 (including maintenance cost of $270,000 and fuel cost of $30,000). The replacement proposal will not result in additional recurrent cost. FSD will deploy existing manpower to operate the new JS without the need for additional resources.

IMPLEMENTATION PLAN

13. Subject to the approval of the Finance Committee, we plan to procure the replacement vehicle according to the following schedule –

	Activity	**Target completion date**
(a)	Preparation of tender specifications	July 2013
(b)	Invitation of tender	October 2013
(c)	Evaluation of tender and award of contract	March 2014
(d)	Testing and acceptance of the vehicle	June 2015
(e)	Training and commissioning of the vehicle	August 2015

PUBLIC CONSULTATION

14. We consulted the Legislative Council Panel on Security on 5 February 2013. Members supported the proposal.

BACKGROUND

15. The AFC of FSD is responsible for performing fire-fighting and emergency rescue operation as well as providing emergency ambulance services in cases of aircraft accidents at the Hong Kong International Airport and its surrounding area and waters. JS is a specialised vehicle of the AFC. Its main function is to control or extinguish aircraft fire with water, foam, dry powder or fire extinguishing gas. At present, FSD has two JSs, with one deployed at the Main Airport Fire Station and the other[3] deployed at the Sub Airport Fire Station.

Security Bureau
March 2013

[3] For the JS at the Sub Airport Fire Station, EMSD considers its overall conditions relatively satisfactory. FSD will therefore plan its replacement work in due course.