

For discussion
on 5 February 2013

Legislative Council Panel on Security
Replacement of a Jackless Snorkel for the Airport Fire Contingent

Purpose

This paper consults the Panel on the proposal of the Fire Services Department (FSD) to procure a Jackless Snorkel (JS) to replace the one (fleet number R14) currently deployed at the Main Airport Fire Station.

Background

The Airport Fire Contingent

2. The Airport Fire Contingent (AFC) 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. To fulfill the international standards, FSD's rescue and fire-fighting vehicles are required to reach each end of the runways within 2 minutes and arrive at any aircraft movement area in the airport within 3 minutes. There are 2 airport fire stations, namely the Main Airport Fire Station near the South Runway and the Sub Airport Fire Station near the North Runway, and 2 rescue boat berths which are located at the eastern and western ends of the runways respectively. There are 2 Rapid Intervention Vehicles, 2 Crash Fire Tenders, 2 Hose Foam Carriers, 1 JS and 1 ambulance in each airport fire station and 4 rescue vessels at each rescue boat berth.

The existing R14 JS

3. JS is a specialised vehicle of the AFC. The JS proposed for replacement has been in service since 2004 and is currently deployed at the Main Airport Fire Station¹. Its special installations and main functions are as follows:

¹ As regards the JS deployed at the Sub Airport Fire Station, EMSD considers that its overall conditions are relatively satisfactory. Therefore, FSD plans to commence its replacement work in 2014.

- (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.

Justifications for the Proposed Replacement

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

(a) Expiry of serviceable life

The Electrical and Mechanical Services Department (EMSD) advises that the normal serviceable life of JS is 8 years. If a JS continues to be used for a long period of time after the end of its normal serviceable life, the deteriorating functions may affect the frontline fire-fighting/rescue operation. The JS proposed to be replaced has been in use since 2004 for over 8 years². Considering that it takes about 2 years to complete the procurement including tendering, construction, delivery, and arranging for commencement of service etc, it is necessary for FSD to commence the replacement work at this stage so as to ensure its operational capability.

(b) Frequent repair and increase of maintenance cost

The major parts of R14 JS such as engine, gearbox and electrical controlling device etc are ageing. To keep them in good operating conditions, it is necessary to carry out maintenance and repair more frequently. The annual maintenance cost of R14 JS in 2012 was about \$270,000, which is 35% higher than the average annual maintenance cost of \$200,000 at the time of its early operation. In the long run, it is anticipated that the

² According to the inspections and assessment of EMSD on R14 JS in 2012, it is estimated that the vehicle could remain in service until the commencement of the new JS.

maintenance cost of R14 JS will continue to increase and is considered not cost effective.

The JS Proposed to be Procured

5. In view of the above problems, FSD proposes to procure a new JS as replacement. The specifications and installations of the new appliance will be largely the same as those of the existing R14 JS and be able to meet the international standards. A more environmental-friendly Euro V engine will be used. The major specifications and installations of the new JS are as follows:

- (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 at 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 operated³ while the vehicle is in motion to ensure the swift performance of fire-fighting operation.

Financial Implications

6. FSD estimates that the total non-recurrent cost of procuring the new JS is \$10.651 million. A detailed breakdown is as follows:

	Item	(\$'000)
(a)	Basic vehicle and the fire-fighting equipment required on board	8,875
(b)	Payment to Electrical and Mechanical Services Trading Fund for project management and acceptance test (10% of item (a) above)	888
(c)	Contingency (10% of item (a) above)	888
	Total:	10,651

The costs required in 2013-14, 2014-15 and 2015-16 are estimated to be \$0.533 million, \$4.26 million and \$5.858 million respectively.

7. FSD estimates that the annual recurrent cost of the new vehicle 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 the existing R14 JS of about \$300,000 (including maintenance cost of \$270,000 and fuel cost

³ Other types of fire appliances need to stop and be lifted slightly with jacks (i.e. jacked up) before operating their booms.

of \$30,000). The replacement proposal will not result in additional recurrent cost. FSD will deploy existing manpower to operate the new JS and will not require additional manpower. Upon the commissioning of the new vehicle, FSD will assess the conditions of the existing JS with a view to considering whether it should be deployed as an operational reserve vehicle when another JS is under maintenance and repair.

Implementation Timetable

8. Subject to Members' views on the proposal, we plan to seek funding approval from the Finance Committee of the Legislative Council in March 2013. If the funding approval is granted, we expect that the implementation timetable would be as follows:

Item	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

9. FSD expects the new JS to be put to use in August 2015. Before that, EMSD will enhance the inspection and maintenance for the existing JS R14 as appropriate so as to maintain its service performance.

Advice Sought

10. Members are invited to comment on the above proposal.

**Security Bureau
Fire Services Department
January 2013**