For discussion **FCR(2012-13)37**
on 8 June 2012

ITEM FOR FINANCE COMMITTEE

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

Members are invited to approve a new commitment of $85,000,000 for procuring a new fireboat to replace the existing Fireboat No. 7.

PROBLEM

The Fireboat No. 7 of the Fire Services Department (FSD) has been in service for over 20 years and has exceeded its designed serviceable life. We need to replace it with a new fireboat equipped with enhanced features.

PROPOSAL

2. The Director of Fire Services, on the advice of the Director of Marine and with the support of the Secretary for Security, proposes to replace the existing Fireboat No. 7 by a new vessel with improved features to better meet the operational requirements of marine fire-fighting and rescue of FSD.

JUSTIFICATION

Functions of Fireboat No. 7

3. Fireboat No. 7, which is an aluminium-hulled catamaran rescue boat, was put into service in 1990. It is FSD's only rescue boat designated for the purpose of mass rescue in marine areas other than the Hong Kong International Airport. Its main duties are as follows –

/(a) …..

(a) to provide port safety and rescue services in Hong Kong waters, in particular to convey a large number of victims/causalities from the disaster scene at sea to a safe place or medical facilities on land in case of large-scale marine incidents such as marine fire, sinking of a large vessel, etc.;

(b) to provide support to fire-fighting services of other fireboats when there is a marine fire; and

(c) to serve as a rescue boat when nuclear-powered vessel visits Hong Kong. In case of emergency, it will be responsible for evacuating the crew members on board, monitoring their radiation level and providing them with simple decontamination facilities on the spot where necessary.

Need to Replace the Existing Fireboat No. 7

4. The designed life expectancy of Government aluminium-hulled vessels is around 15 years. Fireboat No. 7 has now been in service for over 20 years[1]. The routine annual overhaul conducted by the Marine Department has revealed that the hull and the decking plate of the fireboat are ageing notably and rusting away. The performance of the fireboat has also deteriorated with the increase in annual maintenance downtime due to mechanical fault by about 62% from 24 days in 2008 to 39 days in 2011.

5. Some components for the major parts such as engine and electricity generator of Fireboat No. 7 have become obsolete and are no longer available in market, making the maintenance of the fireboat increasingly difficult. The annual maintenance cost of the fireboat has increased from about $590,000 in 2008 to about $1,400,000 in 2011. The maintenance cost will continue to increase as the vessel ages further. Taking into account the lead time of around two years to go through the necessary procedures for procuring a new vessel (see paragraph 16 below), we need to commence the preparation work now.

The Proposed Vessel

6. In order to meet the operational requirements more effectively, we propose to procure a new vessel with the following major enhanced fire-fighting and rescue functions and installations –

/(a) …..

[1] In 2005, the Marine Department conducted an assessment on Fireboat No. 7 which had been in service for 15 years and considered that the Fireboat could remain in service for several more years. Seven years have elapsed since then.

(a) the maximum speed will increase to 35 knots from the existing 27.5 knots. A higher speed enables speedier arrival at the incident scene and conveyance of victims/casualties to a safe place or medical facilities on land;

(b) an independent fire pump and two remote-controlled water/fire extinguishing foam monitors will be installed, which will substantially improve the fire-fighting capability and efficiency as compared to the existing fire pump with power supplied by the fireboat engine and one manual-controlled water/fire extinguishing foam monitor;

(c) rescue life rafts with higher capacity (from the present 320 to 420 persons) will be equipped for mass rescue to tie in with the commissioning of the cruise terminal[2]. In the event of a cruise incident, casualty of over a thousand might be involved;

(d) a small boat will be provided to facilitate fire services staff conducting incident scene assessment at shallow waters and formulating action plan;

(e) enhanced complementary facilities such as the addition of night vision telescope, remote-controlled search lights, flood lights and diving equipment store room, etc. will be provided to provide better support for operations;

(f) a high-efficient air filtration system and radiation monitoring equipment etc. will be installed and the wheelhouse/cabin will have pressurisation systems. These are to prepare for rescue operations just in case there is such a need during the visits of nuclear-powered vessels to Hong Kong. The new vessel will also be better equipped with decontamination facilities to enhance our capability in dealing with relevant incidents and provide better protection for the frontline staff; and

(g) a waterjet propulsion system will be installed, which is more suitable for operation in shallow waters than the existing propeller system.

7. A comparison of the main functions of the existing and the proposed new Fireboat No. 7 is at Enclosure. As the fire-fighting equipment of the new fireboat will be enhanced considerably as compared to the current one, we plan to deploy the new fireboat for more marine fire-fighting work.

Encl.

/FINANCIAL …..

[2] The cruise terminal is expected to be in operation from mid-2013 onwards.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

8. The non-recurrent cost of procuring a new fireboat, together with the necessary facilities on board, is estimated to be $85,000,000. The detailed breakdown is as follows –

		$'000
(a)	Basic vessel with on board machinery and equipment	64,800
(b)	Installation of equipment for handling chemical, biochemical and radiological related incidents	9,000
(c)	Installation of selective catalytic reduction device	2,000
(d)	Payment to the Electrical and Mechanical Services Trading Fund (EMSTF)	1,600
(e)	Contingency (10% of items (a) to (c) above)	7,600
	Total :	**85,000**

9. On paragraph 8(a) above, the estimate of $64,800,000 is for the design and construction of the aluminium-hull vessel and the superstructure, the basic facilities on board (such as engine, electricity generator, anchorage equipment and rudder), fire-fighting and navigation equipment, etc. This does not include the cost of some equipment such as portable fire-fighting equipment, which can be deployed for use from the existing Fireboat No. 7 to the replacement vessel.

10. On paragraph 8(b) above, the estimate of $9,000,000 is for procuring the equipment for handling chemical, biochemical and radiological related incidents (such as high-efficient air filtration system, radiation monitoring equipment and the wheelhouse/cabin with pressurisation systems).

11. On paragraph 8(c) above, the estimate of $2,000,000 is for procuring the selective catalytic reduction device to reduce emission of pollutants of the vessel.

/12. …..

12. On paragraph 8(d) above, the estimate of $1,600,000 is for payment to EMSTF for providing project management services for the communication and navigation equipment, etc.

13. On paragraph 8(e) above, the estimate of $7,600,000 represents about 10% contingency on the cost items set out in paragraphs 8(a) to (c) above.

14. The estimated cash flow requirement is as follows –

Year	**$'000**
2012 – 13	8,500
2013 – 14	42,500
2014 – 15	34,000
Total :	**85,000**

Recurrent Expenditure

15. The estimated annual recurrent cost of the new fireboat is $6 million, covering $5.2 million for repairs and maintenance and $0.8 million for fuel consumption. The recurrent cost of the new fireboat is higher than that of the existing fireboat, which was $1.7 million[3] in 2011. This is mainly due to the higher maintenance cost of the new facilities such as the equipment for handling nuclear and biochemical related incidents and other complementary facilities such as high-efficient air filtration system and radiation monitoring equipment. There will also be higher fuel cost resulting from the enhancement of the overall functions of the new fireboat, which include enhanced speed, fire-fighting and rescue capabilities. FSD will absorb the additional recurrent cost from within its existing resources and will deploy existing staff to man the replacement vessel. No additional staff will be required.

IMPLEMENTATION PLAN

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

/**Activity** …..

[3] Includes about $1.4 million maintenance cost and about $0.3 million fuel cost.

	Activity	Target completion date
(a)	Preparation of tender specifications	November 2012
(b)	Invitation of tender	February 2013
(c)	Evaluation of tender and award of contract	July 2013
(d)	Construction and delivery of vessel	September 2014
(e)	Training and commissioning of the vessel	December 2014

PUBLIC CONSULTATION

17. We consulted the Legislative Council Panel on Security on 8 May 2012. Members supported the proposal.

BACKGROUND

18. At present, there are 21 vessels in the fireboat fleet of FSD. They include fireboat, rescue boat, support vessel, command boat and speedboat. The vessels are deployed at different locations for providing fire-fighting and rescue services in marine area of Hong Kong.

Security Bureau
May 2012

Main specifications/equipment of the existing Fireboat No. 7 and the proposed new fireboat

General specifications

	Item	Existing Fireboat No. 7	Proposed new fireboat
1.	Length	23 metres	Not more than 30 metres
2.	Breadth	10 metres	About 10 metres
3.	Draught	1.6 metres	About 1.8 metres
4.	Air draught	12.5 metres	Not more than 12 metres
5.	Endurance	seven hours	nine hours
6.	Engine	two sets of 410-kilowatt diesel engines	two sets of about 2200-kilowatt diesel engines (the actual engine power to be designed by the successful tenderer)
7.	Speed	27.5 knots	35.0 knots
8.	Electricity generator	one set	two sets
9.	Type of propulsion system	Propeller	Waterjet

Rescue and fire-fighting equipment

	Item	Existing Fireboat No. 7	Proposed new fireboat
1.	Rescue capacity (by means of life rafts)	320 persons	420 persons
2.	Installation and provision of equipment for handling chemical, biochemical and radiological related incidents	Only simple decontamination facilities	Air filtration system, radiation monitoring equipment, etc. Wheelhouse/cabin will have pressurisation system and with enhanced decontamination facilities

	Item	Existing Fireboat No. 7	Proposed new fireboat
3.	Small boat (to facilitate operation in shallow waters)	Nil	one unit (a rigid hull inflatable boat of about 6 metres long)
4.	Sonar	Nil	Equipped
5.	Night vision telescope	Nil	Equipped
6.	Portable water-proof marine radio communication system	Nil	Equipped
7.	Search light	one set of remote-controlled search light	two sets of remote-controlled search lights
8.	Flood light	two sets of manual-controlled flood lights	two sets of remote-controlled flood lights
9.	Fire pump	Driven by the power of fireboat engine	Driven by the power of an independent engine
10.	Water/fire extinguishing foam monitor	one set of manual-controlled water/fire extinguishing foam monitor	two sets of remote-controlled water/fire extinguishing foam monitors
11.	Drencher system	Nil	Equipped
