

ITEM FOR FINANCE COMMITTEE

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

Members are invited to approve a new commitment of \$13 million for procuring a replacement fireboat.

PROBLEM

Fireboat No. 4 is reaching the end of its economic serviceable life after over 20 years of service. We need to replace it with a new vessel with up-to-date features.

PROPOSAL

2. The Director of Fire Services (D of FS), on the advice of the Director of Marine (D of M) and with the support of the Secretary for Security, proposes to replace Fireboat No. 4 by a new fireboat with enhanced fire-fighting and rescue capabilities.

JUSTIFICATION

Functions of Fireboat No. 4

3. Commissioned in 1985, Fireboat No. 4 is one of the three existing purpose-built steel-hulled medium fire-fighting vessels. It has on board fire pumps, deck monitors, foam-making equipment, salvage suction equipment and an inflatable dinghy for use in shallow waters. It is currently deployed at the Aberdeen Fireboat Station to provide maritime fire coverage to Aberdeen Harbour, Aberdeen Typhoon Shelter¹, East Lamma Channel, Tai Tam Bay, Lamma Island and Lamma Power Station.

/Maintenance

¹ The Aberdeen Typhoon Shelter has a large floating population of fishermen, especially during the fishing moratorium and the Lunar New Year periods.

Maintenance Problems

4. D of M advises that the normal life expectancy of steel-hulled vessels in the Government fleet is about 20 years, after which the vessels will be beyond economical repair. With more than 20 years of service, Fireboat No. 4 is reaching the end of its normal serviceable life. Therefore, we propose to replace it by a new vessel in 2008.

5. It has become increasingly difficult and costly to maintain Fireboat No. 4 in good operating condition. It is difficult to find suitable spare parts for its main engines, gearboxes and fire pumps, which are all obsolete models in the market. Replacement of the main engines, gearboxes and fire pump gearboxes will cost about \$4 million. As the vessel ages further, the annual maintenance cost is estimated to increase from \$0.60 million in 2005-06 to \$0.93 million in 2008-09. Also, as Fireboat No. 4 ages, the docking time for repair and maintenance of the vessel will continue to increase, thereby affecting its availability. For comparison purpose, the actual docking times of the three existing medium fire-fighting vessels are appended below –

Vessel	Docking Days		
	2003	2004	2005
Fireboat No. 2	29	25	25
Fireboat No. 5	27	27	27
Fireboat No. 4	25	44	- ²

The Proposed Replacement Vessel

6. Besides the increasing maintenance cost and docking time, the design of Fireboat No. 4 can hardly meet the current operational requirements due to its intrinsic limitation of speed, sea keeping capability³ and fire-fighting capacity. In order to meet the operational requirements nowadays, the replacement vessel will have higher speed and better sea keeping capability, as well as other enhanced and upgraded features as summarised below –

/(a)

² Due to operational reasons, the scheduled maintenance originally scheduled for 2005, which involved 55 docking days, was deferred to April 2006.

³ Sea keeping capability is the ability of a vessel to remain stable, and reduce the seasickness of the crew and passengers on board under rough sea conditions.

- (a) the replacement vessel can operate at a higher speed of 22 knots instead of the present eight knots of Fireboat No. 4, thus enabling quicker response to incident scenes;
- (b) in addition to the two fire pumps driven by the two main engines via the power-take-off system, which are similar to the design of Fireboat No. 4, an independent fire pump will be installed on the replacement vessel to ensure the reliability of the fire-fighting capability. Among other things, the fire pump will discharge higher water/foam output for extinguishing fire; and
- (c) the fuel tank and fresh water tank capacities of the replacement vessel will be 4 200 litres and 460 litres respectively, which are twice as large as that of the existing ones. The enhancement will enable greater endurable hours and longer operating time.

FINANCIAL IMPLICATIONS

Non-recurrent Expenditure

7. On the advice of D of M, D of FS estimates that the cost of procuring a replacement fireboat installed with the necessary fire-fighting and rescue equipment is \$13 million, broken down as follows –

	\$ million
(a) Basic vessel	10.50
(b) Spare parts	1.15
(i) Spare main engine, gearbox, generator set, fire pump set, etc.	0.80
(ii) On board running spares	0.30
(iii) Electronic spare parts, testing equipment and tools	0.05
(c) Electrical and Mechanical Services Trading Fund (EMSTF) project management charges	0.15
	<i>Sub-total</i> <u>11.80</u>
(d) Contingency [10% of (a) to (c)]	<u>1.20</u>
	Total <u>13.00</u>
	/8.

8. On paragraph 7(a) above, the expenditure of \$10.50 million is for procuring the basic vessel, navigational equipment, electrical installations, external fire-fighting system and rigid hull inflatable boat with davit. This does not include the cost of portable fire-fighting and communications equipment as such equipment currently on board the existing Fireboat No. 4 is still in serviceable condition and can be deployed to the replacement vessel for use.

9. On paragraph 7(b) above, the expenditure of \$1.15 million is for purchasing the necessary initial spare parts so as to keep the downtime of the fireboat to the minimum⁴. The new vessel to be procured is a unique model. The designed features and engines fitted on it are different from existing Government vessels. As such, the spare parts kept in the stock pool of the Marine Department are not appropriate for use on the new Fireboat No. 4.

10. On paragraph 7(c) above, the expenditure of \$0.15 million is for payment to EMSTF for providing project management services for the electronic navigation and communications equipment.

11. On paragraph 7(d) above, the expenditure of \$1.20 million represents an approximately 10% contingency on the cost items set out in paragraphs 7(a) to (c) above.

12. The estimated cash flow is as follows –

Year	\$ million
2007-2008	7.80
2008-2009	5.20
Total	<u>13.00</u>

Recurrent Expenditure

13. D of FS estimates that the additional recurrent expenditure of the new vessel from 2008-09 and onwards, net of the annual recurrent expenditure of \$0.70 million for the existing Fireboat No. 4, will be \$1.40 million per annum. The breakdown is as follows –

/\$ million

⁴ The purchase of spares is generally included in the procurement of the Government vessels.

	\$ million
(a) Repairs and maintenance	0.60
(b) Fuel consumption	0.80
Total	<u>1.40</u>

14. On paragraph 13(a) above, the expenditure of \$0.60 million is for the additional maintenance costs for the basic vessel. Such increase is proportionate to the enhanced features and capabilities of the replacement fireboat.

15. On paragraph 13(b) above, the expenditure of \$0.80 million is for the additional fuel cost attributable to the higher vessel power and enhanced maritime fire-fighting and rescue capabilities of the replacement vessel.

16. D of FS will absorb the additional recurrent expenditure of \$1.40 million per annum from within his existing resources. He will also deploy existing staff to man the replacement vessel and no additional staff is required.

IMPLEMENTATION PLAN

17. We plan to procure the replacement vessel according to the following timetable –

Activity	Target completion date
(a) Design and specifications preparation	December 2006
(b) Tendering	March 2007
(c) Tender evaluation and award of contract	April 2007
(d) Construction and delivery of vessel	April 2008

PUBLIC CONSULTATION

18. We consulted the Legislative Council Panel on Security on 4 April 2006 by circulation of an information paper. Members have not raised any comments on the funding proposal.

/BACKGROUND

BACKGROUND

19. The existing fireboat fleet comprises two major fireboats, three medium fireboats, one personnel carrier, one diving support vessel, two diving speedboats, one maintenance reserve medium fireboat and one reserve catamaran rescue boat. Each fireboat plays a specific role to provide water-based fire and rescue services in Hong Kong waters. Any depletion in this protective network of fire and rescue coverage could have serious consequences for the protection of life and property.

Encl.

20. At present, the two major fireboats (Fireboat Elite and Fireboat Excellence) and the three medium fireboats (Fireboats No. 2, 4 and 5) are strategically deployed to provide maritime fire coverage at specific areas. Details of the coverage are at the Enclosure. As regards the other vessels, the diving support vessel and the two diving speedboats are provided for diving rescue purposes, but they are also at times mobilised to support fire-fighting operations in shallow waters. The catamaran was a rescue boat for the old Kai Tak Airport. It has been modified to serve as a reserve vessel to cater for contingency.

Security Bureau
May 2006

Deployment of major and medium fireboats in Hong Kong waters

Name of Fireboat (Category)	Berthing Base	Areas of Deployment	Functions
Fireboat Elite (Major)	Central Fireboat Station	Victoria Harbour & Eastern Waters	To provide fire coverage to vessels berthed or anchored in the harbour, and provide assistance to on-shore installations in the close proximity.
Fireboat Excellence (Major)	Tsing Yi Fireboat Station	Western Waters	To provide fire coverage to oil tankers and container ships berthed at the nearby oil terminals, potentially hazardous installations, container terminals, floating docks and shipyards.
Fireboat No. 2 (Medium)	Mui Wo Fireboat Station	Western Waters	To provide fire coverage to vessels berthed or anchored in Lantau Island, and protect on-shore residents of Lantau Island, Cheung Chau, Peng Chau, Tai A Chau and Hei Ling Chau.
Fireboat No. 4 (Medium)	Aberdeen Fireboat Station	Southern Waters	To provide fire coverage to Aberdeen Harbour, Aberdeen Typhoon Shelter, East Lamma Channel, Tai Tam Bay, Lamma Island and the Lamma Power Station.
Fireboat No. 5 (Medium)	Tuen Mun Fireboat Station	Western Waters	To provide fire coverage to the River Trade Terminal at Tuen Mun Area 38, and supplement the level of fire protection to the adjacent Hong Kong International Airport, potentially hazardous installations, Sha Chau and the future Tuen Mun Port Development.
