

ITEM FOR FINANCE COMMITTEE

HEAD 166 – GOVERNMENT FLYING SERVICE

Subhead 603 Plant, vehicles and equipment

New Item “Procurement of seven helicopters and associated mission equipment of the Government Flying Service”

Members are invited to approve a new commitment of \$2,187,500,000 to procure seven helicopters and the associated mission equipment for Government Flying Service.

PROBLEM

We need to replace and upgrade the existing three large helicopters (Super Puma helicopters) and four small helicopters (Dauphin helicopters) as well as the associated mission equipment of Government Flying Service (GFS) to meet the latest operational needs of GFS.

PROPOSAL

2. The Controller, GFS, with the support of the Secretary for Security, proposes to create a new commitment of \$2,187,500,000 to procure seven helicopters and the associated mission equipment.

JUSTIFICATION

Need for replacement

3. The existing three Super Puma helicopters and four Dauphin helicopters have been in service since 2001 and 2002 respectively. Up to now, the flying hours of the two types of helicopters have already exceeded 18 000 and 17 400 hours respectively. Based on the current utilisation pattern and frequency, the service lifespan of these helicopters is generally about 13 to 15 years. In late 2011, GFS thoroughly examined the capability and safety condition of its
/helicopter

helicopter fleet, and confirmed that the helicopters in the fleet could still meet the service demand for a few more years, but would reach the end of their service lifespan after 2017. As it takes time to procure a helicopter fleet, it is necessary to commence the preparation for the replacement now to ensure uninterrupted delivery of reliable and efficient flying services provided by GFS.

4. The existing helicopter fleet is also facing the following maintenance and repair problems –

(a) Increased repair frequency

GFS helicopters are required to operate in highly salt-laden atmosphere over the sea, and are therefore susceptible to varying degrees of corrosion. Corrosion accelerates ageing as well as wear and tear of the airframe and certain components, thereby increasing the frequency of component replacement. There has been an increasing need for GFS to conduct more frequent repair and maintenance for maintaining flight safety and services. If the helicopters are not replaced in a timely manner and are used beyond their service lifespan, the structures of the helicopters, even with frequent repairs, may not be able to comply with the aviation safety requirements.

(b) Increasing difficulty in securing spare parts for maintenance

With the ageing of the helicopter fleet, the frequency of scheduled and non-scheduled maintenance has increased over the past few years, expediting the replacement of the spare parts and components. Since the discontinuation of the production of Super Puma helicopters by the manufacturer in 2007, the lead time taken for GFS to procure spare parts from the manufacturer has been prolonged from two or three weeks to one to seven months in the past two years. To remedy the situation, since 2010, GFS has been procuring spare parts in bulk quantities from the manufacturer and spare parts suppliers, and purchasing spare parts from other Super Puma operators with a view to reducing the delivery time and increasing the stock of essential spare parts. However, these measures cannot fully resolve the problem. The manufacturer and spare parts suppliers are not able to provide spare parts and components of the avionics and navigation systems of Super Puma helicopters immediately for replacement. Dauphin helicopters will also face the same difficulty in securing spare parts for maintenance in the coming five years. A timely replacement of helicopters is necessary to ensure that the maintenance of the helicopter fleet will not be adversely affected due to the lack of spare parts for replacement.

/Service

Service enhancement

5. GFS plans to procure seven medium-sized helicopters from one single model to replace the current two-model fleet. The new helicopters will better meet the operational needs of GFS in terms of safety, capability, size and cost effectiveness, and the mission equipment will also be more advanced. The new features, capabilities and their advantages are summarised as follows –

(a) Raising operational efficiency

This single-model helicopter fleet will allow uniformity in operational procedures. As flight crew and engineering staff will only need to familiarise themselves with the operation of one helicopter model, their training will be focused more on enhancing service quality and safety level. This will also improve operational efficiency in staff deployment, since they no longer need to adapt to two different helicopter models for operations;

(b) Enhancing search and rescue (SAR) and counter-terrorist capabilities

At present, only the three Super Puma helicopters are capable of undertaking night time and offshore SAR operations. In future, all new helicopters will be able to discharge such SAR functions, thus enhancing operational effectiveness and efficiency. Since the new fleet is operating under one single model and is able to be equipped with all required mission equipment, it can be more flexibly deployed for responding to different counter-terrorist and law enforcement operations, and will better serve the operational needs of the Hong Kong Police Force in promptly responding to potential threats;

(c) Increased passenger capacity

Currently, the total number of passengers that the Super Puma and Dauphin helicopters can carry altogether is 88. The new fleet capacity is planned to increase to 105, representing an increase of about 19%. The new fleet will be capable of handling more rapidly and effectively large-scale passenger transfers, such as conveying a large number of law enforcement officers to specific destinations;

(d) Better avionics system

The new avionics system of the new fleet will comply more closely with the aviation safety requirements, and further enhance safety and efficiency in carrying out SAR and law enforcement operations in the congested airspace and mountainous terrain in Hong Kong, especially during night time and in conditions of low visibility;

/(e)

(e) Enhanced mission equipment

The new helicopters can be installed with the full range of mission equipment. Various new mission equipment (such as dual rescue hoists for rescue operations, additional external lighting for SAR and law enforcement operations, formation lights for night vision goggles, and encrypted digital communications system for the Unified Digital Communications Platform, etc.) will provide greater protection for crew members and better support for patients and other departments;

(f) Compliance with the latest international safety standards

Whereas the current fleet is able to comply with the airworthiness standards prevailing at the time of manufacture around the early 2000s, the new ones will comply with the latest and more stringent airworthiness standards of the Federal Aviation Administration of the United States (US FAA) or the European Aviation Safety Agency (EASA)¹;

(g) Anti-corrosion airframe structures

With the new anti-corrosion technology, the new helicopters will be subject to a slower rate of corrosion even though they have to operate in the hot and humid climate in Hong Kong and the salt-laden operating environment over the sea; and

(h) Guaranteed spare part supply

A single model helicopter fleet will require stocking fewer spare parts, tools and equipment as compared with the current arrangements, hence achieving operational synergy and more effective use of resources. GFS will require the helicopter manufacturer to extend the guarantee period of spare parts and technical support so as to ensure the best support for the helicopter fleet during its service.

FINANCIAL IMPLICATIONS

Non-recurrent expenditure

6. GFS estimates that the replacement of seven medium-sized helicopters and associated mission equipment will incur a total non-recurrent expenditure of \$2,187.5 million, with breakdown as follows –

/(a)

¹ Airworthiness standards FAR-29 of the US FAA and CS-29 of the EASA.

	\$ million	Total Cost \$ million
(a) Seven medium-sized helicopters		1,456.00
(b) Mission equipment and modification work with certification		494.80
(i) dual rescue hoists and hoist cameras	74.10	
(ii) emergency medical system kits and multiple stretchers installations	25.00	
(iii) forward looking infra-red thermal detectors and mission consoles	84.20	
(iv) radar system	95.10	
(v) other SAR equipment	37.50	
(vi) equipment required for law enforcement operations	55.00	
(vii) microwave data downlink system and encrypted digital communication system	42.00	
(viii) equipment for fast conveyance of law enforcement officers	31.00	
(ix) external cargo hooks and fire buckets	19.50	
(x) digital aerial survey cameras and airborne laser scanning system	30.40	
(xi) other supporting equipment	1.00	
(c) Spare parts and tools		119.70
(d) Training for flight crew and engineering staff		12.40
(e) Evaluation and support		0.44
(f) Contingency [about 5% of items (a) to (e)]		104.16
	Total	2,187.50

7. On paragraph 7(a) above, the estimate of \$1,456,000,000 is for the procurement of seven medium-sized helicopters.

8. On paragraph 7(b) above, the estimate of \$494,800,000 is for the procurement of mission equipment required for SAR operations and support services for various government departments, and for the associated modification work and certification.

9. On paragraph 7(c) above, the estimate of \$119,700,000 is for the procurement of the initial batch of spare parts and maintenance tools such as main rotor and tail rotor blades, rescue hoist, external cargo hook, navigation and communication components and tools for maintenance, as well as testing of the helicopters and components.

10. On paragraph 7(d) above, the estimate of \$12,400,000 is for the training for flight crew and engineering staff on the operation and maintenance of the new helicopters, including a total of 45 man-months of overseas ground and flying training for 60 Pilot Grade and Air Crewman Officer Grade staff and 65 man-months of ground and practical training for 52 Aircraft Engineer Grade and Aircraft Technician Grade staff.

11. On paragraph 7(e) above, the estimate of \$440,000 is for the evaluation of the new helicopter model and the associated mission equipment.

12. On paragraph 7(f) above, the estimate of \$104,160,000 represents about 5% contingency on the items set out in paragraphs 7(a) to (e) above.

13. The estimated cash flow requirement is as follows –

Year	\$ million
2013-14	0.25
2014-15	614.50
2015-16	614.71
2016-17	518.45
2017-18	439.59
Total	<u>2,187.50</u>

/Recurrent

Recurrent expenditure

14. GFS estimates that the annual recurrent expenditure of the new helicopter fleet will be similar to that of the existing helicopter fleet. In 2012-13, the relevant expenditure is about \$82 million. The replacement will not incur additional recurrent staff cost. GFS will deploy its existing staff to operate and maintain the new helicopter fleet.

Sale of the existing helicopter fleet

15. Upon the commissioning of the new fleet, GFS will, having regard to the handover and operation of the new and old helicopters, sell off the existing helicopters by phases². It is not possible to estimate at this stage the sale price which will depend on the condition of the fleet and the market demand for these types of aircraft at the time of the sale.

ALTERNATIVES CONSIDERED**Modification of the existing helicopters**

16. Taking into account the varying degrees of ageing of the helicopters in the fleet and the difficulty of securing spare parts, GFS considers that it is not feasible to maintain the current service standard in the long run even with modification of the existing helicopters.

Phased replacement of the two existing helicopter models

17. GFS has carefully considered the option of retaining two existing models of helicopter and replacing them by phases. However, this option would mean that GFS has to continue to operate helicopter with two different models. GFS considers that this arrangement would not be the most efficient because flight crew would have to spend extra time in resolving co-ordination problems arising from operating two different models, hence compromising on cost-effectiveness.

/18.

² One Dauphin helicopter will be retained in the initial years of the operation of the new fleet in order to cater for the unlikely scenario where the new helicopter fleet cannot be deployed for services due to mechanical failure or reported failure of the same type of helicopters overseas. In addition to the Dauphin helicopter, GFS's current fixed-wing aircraft will assist in operations. GFS will also coordinate with other SAR units in the territory, including surface vessels in the vicinity to assist in rescue operations if necessary.

18. GFS has also carefully considered replacing the helicopters by phases. However, this option would prolong the transition of the new and old helicopters. During that transitional period, GFS would have to continue to rely on the aged helicopters to provide rescue services, which is not desirable in ensuring flight safety. In addition, the cost of procuring seven helicopters in one batch is lower than procurement by batches.

IMPLEMENTATION PLAN

19. If the funding approval is obtained, GFS plans to implement the replacement programme according to the following timeframe –

Activity	Target completion date
(a) Preparation of tender specifications	April 2014
(b) Tendering	September 2014
(c) Tender evaluation and award of contract	June 2015
(d) Training for flight crew and engineering staff	June 2017
(e) Testing, acceptance and commissioning by phases	September 2017
(f) Commissioning of the entire new fleet	October 2017

PUBLIC CONSULTATION

20. We consulted the Legislative Council Panel on Security on 27 May 2013. Members supported the proposal.

BACKGROUND

21. GFS provides round-the-clock SAR and air ambulance services, and supports the work of various Government departments. Helicopters are mainly responsible for SAR, air ambulance, internal security and hill fire fighting duties. To meet operational needs, the helicopter fleet is required to undergo modifications for installing mission equipment.
