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1 June 2009

Mr Raymond Lam
Clerk to Panel on Security
Legislative Council Secretariat
Legislative Council Building
8 Jackson Road
Central, Hong Kong

Dear Mr Lam,

**Replacement of Two Fixed-wing Aircraft and
the Associated Mission Equipment
for the Government Flying Service**

The Panel on Security discussed the proposal to replace two fixed-wing aircraft and the associated mission equipment for the Government Flying Service (GFS) on 5 May 2009 (LC Paper No. CB(2)1419/08-09(03)). As requested by Members, we provide the supplementary information as set out below.

**Uniqueness of the role/operation of GFS and uniqueness of extensive
modifications required for its fixed-wing aircraft**

GFS carries out a wide range of functions, including search and rescue, emergency medical services, assistance in law enforcement and fire fighting, photography for aerial surveys, and other flying services in support of the work of various government departments and agencies. In other parts of the world, such diverse functions are normally

undertaken by different and often highly specialized agencies or military establishments as illustrated in the table below –

| Country | Maritime search and rescue | Law enforcement | Aerial survey | Emergency medical service |
|----------------|---|---|---|--|
| USA | <ul style="list-style-type: none"> • US Coast Guard | <ul style="list-style-type: none"> • Drug Enforcement Administration • Federal Bureau of Investigation • Homeland Security • Police | <ul style="list-style-type: none"> • individual government departments /agencies • commercial companies | <ul style="list-style-type: none"> • armed forces • police • commercial companies |
| UK | <ul style="list-style-type: none"> • Royal Air Force • UK Coast Guard | <ul style="list-style-type: none"> • UK Coast Guard • Police | <ul style="list-style-type: none"> • individual government departments /agencies • commercial companies | <ul style="list-style-type: none"> • armed forces • police • commercial companies |
| Japan | <ul style="list-style-type: none"> • Japan Coast Guard • Japan Self Defense Force | <ul style="list-style-type: none"> • Japan Coast Guard • Japan Self Defense Force • Police | <ul style="list-style-type: none"> • individual government departments /agencies • commercial companies | <ul style="list-style-type: none"> • Japan Coast Guard |

The fleet size involved is considerably larger than that of GFS and there is a higher degree of functional specialization of the aircraft deployed. The aircraft used by military organizations are not subject to civil aviation regulations.

We are not aware of any other single civilian emergency response unit in the world that provides the same diverse range of services as GFS does. The only nearly comparable organization is the Singapore Air Force. While it provides the range of services listed in the above table, it is a military establishment with a fleet of over 30 fixed-wing aircraft (excluding its fighter fleet) of six different models, some of which are military specific models.

In contrast, GFS's two fixed-wing aircraft are multi-purpose. With the proposed modification to accommodate all essential mission equipment, the two aircraft will be able to carry out the full range of services listed in the above table. This approach will maximize the utilization of GFS's aircraft, and hence is a more cost-effective solution than procuring a larger fleet with each aircraft being deployed for only limited, dedicated functions.

Reasons for the high procurement cost of the proposed jet planes in comparison with the cost of the existing two J-41 aircraft

For the purpose of estimating the cost of replacing the two existing J-41 aircraft, GFS conducted market research for a suitable fixed-wing aircraft type based on its operational requirements and found out that available aircraft types that are able to meet GFS's requirements in terms of capability, performance, size and cost-effectiveness are dominated by small jet planes.

As regards the mission equipment, GFS's market research showed that the models currently available in the market use more advanced technology than that used in the existing mission equipment installed on GFS's existing two J-41 aircraft. The functionalities and capabilities of the new models are more sophisticated with much enhanced performance. The installation of the mission equipment on the new aircraft will have to be performed by aircraft manufacturers with the capability and experience in such highly specialised modification

work and in obtaining the requisite certification from the relevant aviation authority. The estimated cost for the modification and certification quoted in the Panel paper is based on the findings of GFS's recent market research.

The market does not offer off-the-shelf fixed-wing aircraft pre-installed with the mission equipment that meet GFS's diversified functional needs. Therefore, GFS has to procure two fixed-wing aircraft made for general purpose and modify them to accommodate the installation of all the necessary mission equipment.

Given the difference between the aircraft type of the fixed-wing aircraft currently used by GFS and the new aircraft proposed to be procured as well as the differences in the level of technological sophistication of the mission equipment being used by GFS and the new equipment available in the market, it is difficult to make a direct cost comparison.

Subject to funding approval, GFS will conduct an open tender exercise to procure the proposed jet planes and the associated mission equipment in accordance with the established procedures.

Breakdown of estimated cost of the mission equipment, modification and certification

The estimated capital cost of the mission equipment and the associated modification and certification for the two proposed jet planes, as quoted in the Panel paper, is based on the findings of GFS's market research. A breakdown is as follows –

| Mission equipment | Estimated procurement cost (HK\$) | Estimated costs of modification and certification necessitated by the installation of the equipment (HK\$) |
|---|--|---|
| 1. Search radar | 50,000,000 | 48,000,000 ¹ |
| 2. Forward looking infra-red (FLIR) detection system | 25,000,000 | 22,000,000 ¹ |
| 3. FLIR/radar operator's station | 7,000,000 | 5,000,000 |
| 4. Satellite communication system, data downlink system, and secure mission radio systems (including the equipment for ground control station) | 28,000,000 | 22,000,000 ¹ |
| 5. Observation station | 9,000,000 | 8,000,000 ¹ |
| 6. In-flight dropping system | 6,000,000 | 15,000,000 ¹ |
| 7. Aerial survey camera | — ² | 20,000,000 ¹ |
| 8. Other supporting equipment (e.g. equipment to support the meteorological measuring system, emergency beacon locating system, secure tracking and communication equipment, and other interface systems) | 39,000,000 | 54,000,000 ¹ |
| Total | 164,000,000 | 194,000,000 |

Modification work carried out on an aircraft is subject to approval by the relevant aviation authority and the issue of appropriate certificate of airworthiness. The aircraft manufacturer performing the

¹ The estimated cost of modification and certification for these items is relatively high because the equipment will protrude from the aircraft and/or the installation of such equipment will require alteration of the aircraft fuselage.

² The aerial survey camera is used by Lands Department which provides aerial photography service for geotechnical survey, infrastructural and planning survey and map production. Lands Department will absorb the cost of the camera.

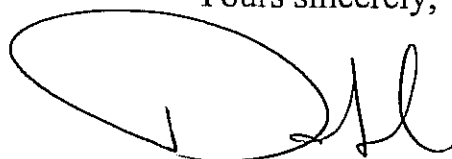
modification work is required to obtain the requisite certification before delivering the aircraft to GFS. This process involves engineering design, actual execution of the modification work, installation of the mission equipment, flight tests after the modification, compilation of test reports, and presentation of all relevant documents to the aviation authority for the issue of certificate of airworthiness.

The actual procurement costs will depend on the result of the open tender exercise to be conducted by GFS.

Disposal of the two B200C Super King Air fixed-wing aircraft after the existing two J-41 fixed-wing aircraft were commissioned into service in 1999

The two Super King Air fixed-wing aircraft and the associated spares and equipment were disposed of through an open tender exercise conducted in March 1999 in accordance with the established procedures, generating revenue of US\$2,648,000 (HK\$20,654,400).

Yours sincerely,

A handwritten signature in black ink, appearing to be 'DL' with a large loop on the left side.

(David Lau)
for Secretary for Security