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The Controller, Hong Kong GFS.

Date: 04 Dec 2014

**SAR STANEVAL FORMAL VISIT – 14-29 Nov 14**

Michael,

Thank you again for asking the RAF SAR StanEval team to come over to Hong Kong to offer our assessment of the Government Flying Service. We were honoured that you considered our unit was suitable for this task.

We were impressed with the positive attitude shown to the team and the willingness to learn/listen. We were extremely well looked after and would request you pass our heartfelt thanks on to everybody who worked so hard to make our time with you go so smoothly.

I have attached the final report and hope that you are pleased with the overall findings and at least consider some of our recommendations/observations. As you will see, our lasting impression is of a well run, well motivated unit that the Hong Kong Government can be proud of.

Many thanks once again

Yours,

A handwritten signature in cursive script that reads "G B Lings".

G B Lings  
Flt Lt  
OC SAR STANEVAL

Attachment:

Formal Visit Report dated 04 Dec 14



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The Controller, Hong Kong GFS.  
Copy to: COS SARF Force HQ\*

Date: 04 Dec 2014

## **SAR STANEVAL REPORT FOR THE FORMAL VISIT TO THE HONG KONG GOVERNMENT FLYING SERVICE (GFS) 14-29 NOV 14.**

### **Introduction**

1. The SARF STANEVAL team visited GFS during the period 14-29 Nov 14. The team members were as follows:

Flt Lt G B Lings  
MAcr A Catterall  
MAcr R Taylor

Officer Commanding, Pilot examiner  
Winchop examiner  
Winchman examiner

2. Assessment of performance, if required, was graded subjectively against UNSATISFACTORY, MARGINAL, SATISFACTORY, GOOD and EXCELLENT.

3. **Aims.** The aims of the visit were:

- a. To assess the operational efficiency of GFS.
- b. To assess the standard of the aircrew (especially the junior crews to assess the quality of the instruction).
- c. To assess the standard of medical care given following the previous visit report
- d. To advise on standardisation of equipment and techniques.
- e. To advise on matters of flight safety.

### **Visit Results**

4. **Achievement.** The complement of aircrew, together with the number flown, were as follows:

	<b>Complement</b>	<b>Number Suitable and Available for Flying</b>	<b>Number Assessed</b>
Pilots	27	20	14
Aircrewmen	33	27	10 in Winch Op Role 13 in Winchman Role

5. **Results.** The general standards of the aircrew cadres were as follows:
- a. The standard of Pilots was assessed overall as SATISFACTORY.
  - b. The Rearcrew standard in the Winch Operating role was assessed overall as SATISFACTORY.
  - c. The Rearcrew standard in the Winchman/Crewman role was assessed overall as SATISFACTORY.

### **Observations and Recommendations**

6. **SAR efficiency.** The GFS is a very busy multi-role unit that has many demands placed on it for a variety of tasks; these include, but are not limited to SAR, Casevac, Fire fighting, Internal Security, Fast Roping etc. This combined with the fact that crews are not dedicated to one particular task, (partly due to under manning, but also to the 2 aircraft types they currently have), means that they are always going to be stretched in their skill sets. The lack of dedicated crews can seem a little confusing to the casual observer, especially during a callout, as multiple people appear in the ops room until the type of mission is confirmed and it is agreed who is going to respond. This can take some time, especially if it involves multiple aircraft. However, the overall response time appears adequate, with GFS meeting the imposed "pledge" times in most cases. StanEval witnessed several call-outs, both in the air and on the ground, as well as an OpEval. The unit's response for standard SAR sorties, walkers, decks and cliff etc was good, but the search planning we observed on the OpEval was poor. Therefore, overall the SAR efficiency is assessed as SATISFACTORY.

7. **Observations and recommendations from previous visits.** Upon arrival, StanEval were given a document which listed the previous observations/recommendations and the action taken to rectify them. It was pleasing to see the majority had been actioned and where not, the reason given (impractical to solve due to time and money constraints etc). Of particular note, it was gratifying to see the progress on the major observation concerning the quality of patient care is progressing well. The following issues were considered worthy of re-raising:

- a. **Training Team Rostering.** It is appreciated that current manning levels prevent the GFS from having a dedicated training team. However, with the introduction of a single aircraft type, which should reduce the number of check flights and training captains, the GFS should look closely at having a dedicated training team.
- b. **Wind Finding Smokes.** The GFS response is to review procedures for the new helicopter type. It is unlikely due to regulation that they will be able to "fire" smoke cartridges from pistols, but there should be little resistance to hand deployable smoke markers. These could even be implemented now and their use continued on the new aircraft. Indeed work should start now and not wait until arrival of the new aircraft which could potential delay the introduction of this useful aid, especially as StanEval witnessed several crews struggling to "find" the wind and ended up winching considerable out of wind on occasions.
- c. **L2 wet-fit floor.** It is agreed that a redesigned wet-fit floor is impractical due to time and money limitations. However, the GFS should ensure that the new aircraft procurement includes either a dedicated wet fit floor or a suitable (easy and quick to fit) solution.
- d. **Rad Alt Bug Setting (Day VMC).** All crews appear to fly around with the DH bug set to zero when transiting in day VMC. On some of the sorties we flew, the visibility

was very poor (4 Km in thick haze) with little or no discernible horizon. Whilst the limitations of the L2 autopilot (possible over-torque if coupled) are understood, the GFS should consider some form of bug protection, even during routine transits and should certainly mandate in the procurement bid that the replacement aircraft has some form of over-torque protection built in and ensure suitable bugging procedures exist (ie not just carry forward the current procedures).

e. **Winch-Op height information/scan.** A lack of height information/scan by the winch-op's was still observed on many sorties, not only over water with the height hold engaged but on decks and sits that were being flown manually. Winch Operators must include regular height information at all times and ensure they do not get fixated on the Winchman during the latter stages of deck/sit deployment to the detriment of the scan. WinchOps are reminded that they are primarily responsible for height control/obstacle avoidance, especially if the pilot is not visual with the obstruction.

8. **Major observations.** The following major observation was made:

a. **Manning.** The GFS are already undermanned, which could affect the SAR efficiency, especially a large disaster that requires a multiple aircraft response. It also prevents the GFS from having a dedicated training team, thus student progress could be restricted which leads to a vicious circle in the under manning as replacements are slow to filter through. With the introduction of a single aircraft type, the GFS should consider role specialisation (ie dedicated SAR crews and dedicated SH crews) with appropriate training teams to cover both new pilot training and continuation training/development of the more experienced crews.

The Manning issues also affect fatigue levels. The GFS have strict rules regarding Flight Time Limitations and in particular rest periods, however these rest periods should be considered a minimum, not a target. Fatigue is cumulative and difficult to measure. The RAF SAR Force recently conducted in depth study into fatigue levels (through QinetiQ) and instigated more stringent roster limitations as a result. It is the SAR StanEval recommendation that manning on the GFS is increased to a level that will reduce these issues.

9. **Minor observations.** The following minor observations were made.

a. **Support of operations.**

(1) **Operations Room and organisation.** The GFS have a very impressive Ops room. The large multi-function display was especially useful to supervisors as it provided excellent situational awareness as to the location of its assets and current tasking. StanEval were pleased to see that junior aircrew are used to assist in manning the Op Desks, as this helps to build up airmanship and an awareness of the unit's busy nature. However, they should not be considered part of the Ops manning, as they cannot always be relied upon to be available (multi asset tasking etc) and like the aircrew, the Ops staff are considered to be undermanned, especially for 24 Hour Ops and full time supervision. The following observation was made regarding Ops room documentation:

(a) **IAM SAR Manual.** It was noted that the Ops room copy of the IAM SAR manual was OOD. It was also noted that the Vol 3 is only kept in the Ops room; this should ideally be kept on the aircraft for reference.

(b) **Master Maps.** Whilst the GFS keep an up to date master map in the Ops room and briefing room, any new obstructions etc are not transferred

onto aircraft or crewman's maps (or there is no procedure in place to ensure they are transferred).

Overall, support of operations was assessed as GOOD

b. **Operating Procedures.** The following observations were made regarding operating procedures:

(1) **Hi-Lines.** There seemed to be a perception amongst all the crews StanEval flew with, that Hi-Line transfers should only be carried out on a parallel deck configuration. Hi-Lines can be used on any deck configuration and whilst it is useful to attempt different profiles to make the training more difficult, it should not be assumed that they can only be carried out on parallels.

(2) **Nitesun.** Several crews were observed to keep the nitesun on during deck winching. Firstly the orders state: "DO NOT expose others within 250' of the beam", so keeping it on whilst winching at 50' over the deck is clearly in violation of this order. Secondly, the brightness of the light often reflects back off the recirculating spray and reduces visibility, especially peripheral vision. On the occasions we asked crews to turn the nitesun off, almost certainly because they could now see more of the horizon etc, their performance improved.

(3) **NVG's.** Crews, especially those on SAR standby, did not routinely take NVGs with them on training sorties or even SAROps and Casevac's, during the late afternoon period. Therefore if they received extra tasking that took them into the night period, they would have to return to base first to collect NVGs. Consideration should be given to carrying NVGs on all sorties where crews are holding SAR standby.

(4) **Radio Volumes.** It was observed that on all but one sortie, the crews kept all radio volumes turned up, even whilst winching. On several occasions important patten was missed and pilots had to ask for commands to be repeated. It is recommended that at some point prior to winching (1<sup>st</sup> Hover checks?) all radios are handed over to the PNF to monitor, and everyone else turn theirs down. The post role checks could include turning the volumes up again to ensure everyone is monitoring the appropriate radio.

c. **Training Documentation and Briefs.**

(1) **Flying Guide.** Work is progressing on the flying guide. This will need to be revised upon introduction of the new aircraft type.

(2) **Instructional Presentation Material.** Work is still in progress to produce a single set of standardised briefs. However those seen were of a high standard.

d. **Aircraft and unit role equipment.** The Unit has a large stock of role equipment and HUSLE; this all appeared to be in excellent order and was meticulously maintained by the SES. Of particular note was a barcode system for logging items on and off the ac. The following observation was made:

(1) **Dispatchers Harness Anchor points [EC155/L2].** The dispatcher's harnesses were seen to be regularly attached to the seat legs on both aircraft types where they become wet and entangled around the crewman's feet. Whilst changing to cabin roof points is impractical in the current aircraft, the GFS should ensure the new aircraft has suitable roof attachment points.

e. **Standardisation.** The following points regarding standardisation were noted:

(1) **Rearcrew/Survivor Security.** Following winch recovery to the aircraft, the Winchman and survivor were seen, on a number of occasions, to be insecure in the cabin next to an open door with the aircraft transitioning away. Consideration should be given to the Winchman reattaching to the safety harness before detaching from the winch hook. This also applies to the survivor security, ie buckled into a seat or the stretcher safely positioned and ideally the door closed before the aircraft transitions.

(2) **Aircraft Safety Calls.** Sorties were observed where it was obvious that the rearcrew did not know what condition the aircraft was in during winching (SSE, committed etc). This was confirmed during debrief. It is essential that all Flight Safety critical calls are acknowledged by all crew members, especially during winching, as this will dictate the WinchOp's actions re cable cut etc during an emergency.

(3) **Winchman "Carry" Height.** The majority of Winchmen appeared to carry themselves too high for deck transfers; this included the height selected for persons transferred via hi-line. This can and did lead to problems over the deck. Winchmen are advised to select a height that just clears obstructions and allows for a short, final winch to the deck. This should reduce the time the ac is in the overhead.

(4) **Wets safety observer.** On one occasion a wets sortie took place in the open sea with no observer for the survivor. Whilst it is appreciated it was close to the shore and to the GFS facilities where other assets are on standby, we still consider that an observer (either safety boat or shore based) would add additional safety should the aircraft have to depart for any reason.

(5) **Wet winching – simultaneous casting of two strops.** During two wet winching trg exercises both Winchman were observed on each lift to cast both primary and secondary strops simultaneously over the survivors head. Although this is a valid technique it only tends to work well on a 'clean' survivor; when he is wearing bulky clothing, a life-preserver or similar, the two strops often get snagged which then prolongs time in the water. Winchmen are encouraged to practice casting the 2 strops individually; the primary strop over the head and the secondary over the feet. They should be given an understanding of when either method is appropriate.

(6) **Rearcrew awareness of aircraft performance.** Rearcrew appeared unaware of the aircrafts expected performance following engine failure etc. On a number of occasions the aircraft was placed in a vulnerable position had an engine lost performance. Rearcrew are therefore encouraged to fly on GH or simulator sorties to increase their awareness of ac performance. All crews should practice a greater number of flyaways in order to build up their familiarity of ac performance in a variety of situations.

(7) **Debriefs.** There seemed to be no standardised debrief format. StanEval recommend starting debriefs with any Flight Safety Issues, then cover the brief (ensure everyone understood the brief, did you achieve the aims etc) then debrief individual elements and finally discuss captaincy and CRM issues.

Overall, standardisation was assessed as SATISFACTORY.

f. **Standard of Instruction.** On this visit we were not asked to fly with any of the instructors, at least not in an instructional role. Instead we mostly flew with the junior members of the unit to see if we felt they were being trained adequately. As we had no major concerns or major observations about any of these crew members, it was considered that the training is mostly sufficient. However we do have the following observations:

(1) **Training Teams.** This has already been commented on, but it was felt significantly important enough to mention again. This is one of the few units we have come across that doesn't have a dedicated training team of some description. Current manning levels mean the training team have to be included on the roster, this is far from ideal and will come at a cost to the advancement of junior crew members. If manning levels improve, the GFS should ideally have a dedicated team of trainers capable of catering for all abilities (from basic instruction for ab-initios to continuation training for the unit boss).

(2) **Scan.** The quality of scan by some winch operators was deemed to be poor, especially on deck winching. They often over fixated on the Winchman during the final stages of deployment/recovery. Dedicated trainers would allow more winch operators to be flown with more regularly to highlight any developing trends like this.

(3) **Training Support.** StanEval were impressed with some of the imaginative training sorties that were provided for us to witness. The fact they went to the expense of hiring a fishing boat to ensure crews had something other than the standard police launch to winch on was very good. The StanEval team would also like to thank the GFS for the lengths they went to help set up a realistic and worthwhile OpEval.

Overall, the standard of instruction at GFS was assessed as GOOD.

g. **Supervision.**

(1) **Flying supervision.** The multi-role nature of the GFS and the large number of callouts make supervision an essential and difficult task. The use of a DOM and the small number of efficient well trained Ops Room staff ensure that all sorties are appropriately crewed, briefed and supervised. The DOM listens into most briefs (and is out briefed on those they cannot observe) and asks pertinent questions where appropriate.

(2) **Administrative supervision.**

(a) **Documentation.** The Integrated Application System (IAS), used for authorisation, also tracks currencies and training completed. E-mails are sent to individuals and the training team automatically if an element is soon to expire. The system appears to work well and the StanEval team found no occurrences of people operating OOD. The administrative supervision is therefore assessed as GOOD.

Overall supervision was assessed as GOOD.

h. **Medical equipment, training and support.** An enthusiastic attitude toward the provision of emergency care was encouraging; on the whole, standards of IEC, training and equipment scales are progressing well. Major positives include clinical mentorship and an increase in the breadth, depth and frequency of IEC training

courses and clinical placements. A number of ACMOs have completed the ORMS IIEC course with several programmed to attend in the coming months. Equipment scales held on the SAR (and CasEvac) ac have been bolstered with the inclusion of pelvic and vacuum splints. All equipment was found to be in good working order and very well organised. Medical stores are well stocked, neat and tidy and managed very well. The IEC trg room was appropriately equipped with training aids that were in excellent order.

Supervision of medical trg is very good; the trg pathway is well structured and follows a logical progression. IEC MTC is recorded on the IAS. Continuation training is carried out by medical Role Training Supervisors (RTS). Of particular note, all ACMOs are mentored by an AMO / AMNO (Drs and Nurses) and a record of all trg is maintained and updated by the RTS. ACMO logbooks contain a section for recording the use of IEC skills and also have space for reflective practice; entries are monitored and signed-off by the clinical mentor. In order to further enhance clinical skills, A&E and ambulance attachments, supervised by AMO / AMNOs, are ongoing.

However, there is still room for improvement of the standard of practical application of IEC skills. Crews should maximise on medical scenario training opportunities to practice and assimilate the assessment and treatment skills they have learnt. Overall, the ACMOs are building a comprehensive knowledge base that has the potential to outgrow the clinical practice guidelines they operate within; this could prove to be frustrating due to compromises that have to be made in patient care. The following observations were made:

- (1) **EATP** – Ideally, the EATP qualification should be completed prior to commencing level 3 Winchman shifts; this was not always the case.
- (2) **Pain Relief** – During a number of trauma related IEC scenarios no pain relief was given, despite casualties suffering significant pain. The benefit of administering early pain relief to patients with moderate to severe pain is paramount. Entonox is the only pain relieving drug that is available to the crews and it is only routinely carried on 'long-range' SAR Ops. This potentially stems from a special precaution in the Entonox guideline that states that it should not be used '*if transport time is less than 15 mins*'. Consideration should be given to amending this guideline and encouraging crews in the use of Entonox; it is recommended that it should be permanently carried on the SAR ac.
- (3) **Equipment scales** – As crews deal with a great number of incidents involving collapsed, exhausted hikers and a blood glucose monitor is carried in the MRB, it would be appropriate to carry Glucose 40% oral gel for the treatment of hypoglycaemia. This is a simple yet effective drug. Also, while conducting IEC scenario training, it was observed that dressings for large open wounds were inadequate. The addition of a field dressing(s) to the equipment scale is recommended.
- (4) **New equipment use** – Despite the fact that vacuum splints and a mattress are carried on the ac, they were seldom used during a large number of IEC trg exercises where they would have been wholly appropriate. On a couple of occasions individuals had difficulty using certain items of med equipment (eg blood glucometer). ACMOs should ensure that they are fully conversant with all IEC equipment; they should not be reluctant to use new and improved kit.
- (5) **Flying helmet removal** - A number of ACMOs were seen to carry out patient assessment while wearing their flying helmet and CEPs. A primary survey



cannot be properly conducted without the ability to clearly hear patient sounds such as a noisy, partially obstructed airway or a casualty's response to questioning. If it is safe to do so a Winchman must remove his helmet prior to patient assessment. However, it is noted that due to the configuration of the Winchman's radio, which can only be used through the helmet, this would leave him without comms. See para 10 d.

(6) **Medical training course certificates** – Not all course certificates were held on record. It is recommended that all certificates should be held in the IEC section of the individual's trg folder.

Overall, the medical support was assessed as SATISFACTORY.

i. **Engineering.** It is difficult for aircrew to assess and therefore comment on engineering support, especially in a country where we are not familiar with the regulations and practices. However, the feeling from the team was one of a highly motivated and well trained unit. The engineering response to arrival and departures and minor un-serviceability's on start-up was prompt and if the fault could not be rectified on the line, the aircraft appeared to be towed straight into the hanger for work to commence. This is even more impressive when you consider the engineers are currently carrying out a 15 year service on one of the L2's (virtually a full strip down) at the same time. The serviceability rate was good and the engineers provided a flexible and cheerful service with rapid responses for operational requests for role changes for wet-fits, SAROps etc. The Safety Equipment team were equally as helpful and whilst not available 24 hours a day, a suitable system is in place for replacement helmets etc during OOH SAROps.

Overall, engineering was assessed as EXCELLENT.

10. **Flight safety (FS).** There was a FS wall in the briefing room and some minor other displays around the building. However, one did not get the overwhelming impression that FS received the level of importance it maybe should. For example, EVERYONE on the GFS has an important role to play in flight safety, so why are there no flight safety posters in the admin area, toilets and especially the canteen which virtually everyone seems to use at some time during the day? Several points regarding FS were noted:

a. **Use of NVGs in Hong Kong Area.** Whilst it is appreciated that the bright lights of Hong Kong and Kowloon may "close down" the NVG picture, there was one occasion that ATC warned of an aircraft in our vicinity that I could clearly see on NVGs, however the flying crew could not see it until they also selected their NVGs. Consideration should be given to one crew member looking out on NVGs (PNF/rearcrew member?) if warned about traffic in the vicinity at night.

b. **Back Protectors.** Although commented on previously, it was observed that whilst back protectors are being worn by most, there are still some individuals who chose not to wear them. Back Protectors should also be offered to other personnel likely to be winched (medical staff, survivors etc). It is recommended that **all** rearcrew are re-briefed on the importance of back protection. Also, they should be carried on all sorties where there is the potential to be called on a SAROp or where winching may be required.

c. **Committed Calls.** StanEval is a great believer in getting the job done as quickly and safely as possible for all concerned. If this means winching committed to enable improved references and a better service for the Winchman, that is acceptable. However, unless Operationally Essential (life at risk), that commit should at least be to

an area that would be survivable by all crew members. This is even more critical on training flights. StanEval witnessed several occurrences during training flights and non life threatening SAROps of pilots calling committed, but to a totally unsuitable area that was most likely un-survivable. On some of these occasions, when questioned, it was obvious that the rearcrew also felt uncomfortable with the commit. They are therefore encouraged to voice their concerns if they feel the commit is not viable.

d. **Winchman Communications.** The present system is unsatisfactory, as it creates a resistance for the Winchman to remove his helmet to talk to a casualty and therefore properly assess them. It is appreciated that it may not be cost effective to introduce a system onto the present aircraft, but the GFS are strongly advised to ensure that a Polycon type system is part of the new aircraft bid. A small handheld VHF FM radio would be an excellent interim fix (the RAF SAR Force currently use the Icom Inc IC – M71, which has proved to be a faultless supplementary radio).

Overall, FS was assessed as SATISFACTORY.

### Summary

11. **Acknowledgements.** StanEval would like to thank the Controller and all the staff at the GFS for inviting an outside unit in to give an honest, unbiased opinion of their work. We were impressed by the enthusiasm of all the crews and their willingness to take on board debrief points. Despite enduring a simultaneous, in-depth and protracted government audit, all of the GFS crews welcomed us; we would like our personal gratitude made clear to all members for the wonderful hospitality shown to us. It made the visit a pleasure and not a chore.

12. **Conclusions.** The GFS is lucky to have purpose built accommodation, comparatively modern aircraft (with brand new aircraft expected in 2017) and a dedicated team that are both professional and enthusiastic. It was obvious the unit interacts well as debrief points from one sortie were acted on in subsequent sorties by completely different crews.

We were asked on this visit to concentrate our efforts on the newer crews, mainly as an aid to assessing the quality of training. On the whole StanEval felt that these crews had the necessary skills and procedures in place to operate safely which demonstrates that the training system must be satisfactory. They would still benefit from more scenario based training, (something that could be achieved with a dedicated training team) and stretching themselves on their training sorties. The multi task function of the GFS makes it difficult to master any particular skill and whilst there may seem to be a multitude of checks take place before each and every evolution, this ensures that the GFS operate in a safe manner. Overall StanEval felt the training system was working well and that the GFS is a credit to the Hong Kong government and people.

*<signed electronically>*

G B Lings  
Flt Lt  
OC SAR STANEVAL

Annex:

A. Consolidated List of Recommendations

750/225 /3



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22 June 2011

**HONG KONG GOVERNMENT FLYING SERVICE - FIXED WING VISIT REPORT**

1. Enclosed is the report on the recent visit to the Hong Kong Government Flying Service (GFS) by Lieutenant Commander Rob Smith and myself. In accordance with your request, the visit offered the opportunity for a thorough and in depth analysis of Fixed Wing operations. I am sure that you will find the observations constructive and accept that the few comments we have made do not detract from the overall assessment of the very high standards exhibited by the GFS.
2. We were extremely impressed with the operation of GFS and witnessed a high level of professionalism exhibited by all departments. Your staff were open and receptive to suggestions and their efforts, hospitality and generosity made for a very informative and enjoyable visit.
3. I hope that the liaison we have established will be on going and your staff are more than welcome to visit 750 Squadron in the future once we are fully converted onto our new aircraft. If you have any further questions, then please feel free to contact either Rob or myself.

A handwritten signature in black ink, appearing to read 'S P Kirkham'.

S P KIRKHAM  
Lt Cdr  
Senior Pilot  
750 NAS

Enclosures:

- A. Formal Fixed Wing Liaison Visit Report to Hong Kong GFS, dated 18 June 2011.

750/225/3



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See Distribution

18 June 2011

**FORMAL FIXED WING LIAISON VISIT REPORT TO THE HONG KONG GOVERNMENT  
FLYING SERVICE, 08 - 18 MAY 11**

**INTRODUCTION**

1. Lt Cdr's Kirkham and Smith were tasked to visit the Hong Kong Government Flying Service (GFS) as part of an Annual Standards visit to complete an audit led by RAF SAR STANAVAL earlier in the year. The visit was conducted between the 08 and 18 May 2011 and was aimed at viewing Fixed Wing operations.

**AIMS**

2. The aims of the visit were:
- a. Observe and comment on the GFS Fixed Wing Standard Operating Procedures and the supporting publications.
  - b. To comment on training standards and supervision.
  - c. To comment on GFS flight safety organisation.
  - d. To comment on GFS engineering support.

**CONDUCT**

3. The detailed and varied flying and ground programme at Annex A enabled many aspects of the GFS BAe 4100 operations to be observed and assessed from a Pilot and Crewman perspective. Ground School instruction, formal presentations, flight planning, briefing and debriefing provided additional opportunities to review the daily routine of GFS.

4. Nine flights were programmed, of which seven were achieved, covering six different operating profiles, totalling just over 11 hours day flying. The night flying sortie was unfortunately cancelled due to weather. This provided a varied snap-shot of fixed wing operations within GFS.

#### MAJOR POINTS

5. The Fixed Wing element of GFS was well supervised and managed, ensuring a measured and safe approach to aviation. The unit was well prepared for the visit and the professionalism and motivation amongst the staff was impressive. Detailed observations are at Annex B, however the following points were considered significant.

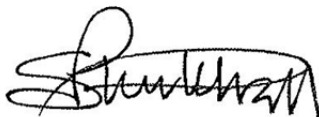
a. It was observed that there was an uneven distribution of the workload in the aircraft. The crewman were keen and enthusiastic without exception. It was evident that they were under utilised, but capable and competent to be trusted with some of the tasks alleviating the unnecessary high workload on the pilots. Their involvement in routine airmanship cycles will not only increase CRM and provide an extra layer of safety but it will also develop the crewman. This will provide a building block for their training and could promote commonality with rotary operations, improving preparation for their more involved role within the rotary world. Further suggestions to develop the individual include entrusting the planning of search sorties that required SAR profiles, FLIR and/or Radar to the crewman; and on occasions fly a senior crewman with a junior crewman to aid subordinate development.

b. As previously experienced rotary SAR crew the value of having fixed wing top cover when operating in a helicopter long range, off-shore, has been very evident to us. Not only is there the assured comfort of support if all goes wrong, but an asset is available that can locate, brief and prepare a vessel for the helicopter transfer, saving valuable time on task. This asset has been withdrawn in the UK and as a result, has limited decisions to operate at the edge of range without this support. It should be emphasised how important this valuable asset is particularly long range, at night and most importantly, in the case of GFS, without support from neighbouring countries. It is therefore recommended that maintenance of this asset is strongly guarded and advise that consideration be made to enhancing cover to 24hours.

6. Flight reports are at Annex C and individual reports, where appropriate, are enclosed.

## CONCLUSIONS

7. Without exception we found the members of the Fixed Wing Element of GFS to be well motivated, competent and thoroughly professional. The visit focused on the Operational effectiveness of the unit, which is considered to be HIGH.
8. Although there were a number of pick up points during our visit, which captured a snap shot of operations, the proportion of operational critical observations is very low, reflecting on the HIGH level of capability.
9. The on-going relationship between 750 NAS and GFS provides a great channel for exchange of ideas and methods. The fundamentals of operating fixed wing in a maritime environment cover many common procedures. The value of sustaining this liaison will continue to be of immense value and help to further enhance the capability of both units, particularly as we both undergo a change of operating platform. It is therefore recommended that the next standardisation check be considered once operations on the new fixed wing aircraft are fully integrated within GFS. A warm invitation is extended for your Officers to visit in the interim, once we are operational on the Royal Navy King Air Avenger.
10. In summary, this has been a thoroughly informative visit which has seen the Royal Navy and the Hong Kong Government Flying Service benefit from a healthy exchange of information, ideas and procedures. The Fixed Wing element of GFS is an effective unit that should pride itself on the high standards it achieves. All personnel have been very receptive to suggestions and we hope that they will help to further raise their already high standards.



S P Kirkham  
Lt Cdr RN  
Senior Pilot  
750 NAS



R E Smith  
Lt Cdr RN  
Senior Observer  
750 NAS

Annexes:

- A. Flying programme
- B. Detailed observations
- C. Flight reports

Enclosures:

Individual Reports

Distribution:

External:

The Controller, Hong Kong Government Flying Service

Internal:

RNAS Culdrose Cdr (Air & Training)

File

**ANNEX A TO**  
**750/225/3 DATED**  
**18 JUNE 2011**

**Audit Visit, May 2011 – FW 1.3 (last updated 20 April 2011)**

<i>SUN 8 May</i>	<i>MON 9 May</i> <i>D: 0810 – 1700</i>	<i>TUE 10 May</i> <i>D: 0810 - 1700</i>	<i>WED 11 May</i> <i>D: 0810 - 1700</i>	<i>THU 12 May</i> <i>D: 0810 - 1700</i>	<i>FRI 13 May</i> <i>B: 1310 - 2200</i>	<i>SAT 14 May</i> <i>OFF</i>
Arrive Hong Kong	Arrive GFS Admin Safety Briefing  Ground Briefing: J41 Familiarization  PM Heli tour/ Local area Famill	<b>Flight 1</b> Windshear Detection Pilots/ Vowell-To  J. Chan/  PM <b>Flight 2</b> FLIR / Radar Homing Pilots/ Kwan-Leung  B. Tang	<b>Flight 3</b> Aerial Survey Pilots/ D.Ng-To  R. Chang + Lands Photographer  PM <b>Flight 4</b> Route Flying: HK – ZGSD - HK Pilots/ M.Ng-Kwan S. Lam	<b>Flight 5</b> Crewman's Droppex Training Pilots/ Kwong-Vowell  J. Ng  PM <b>Flight 6</b> Off shore SAREX Pilots/ D.Ng-Tang R. Chan	PM PPt presentation: Aerial Surveillance/ Police Ops: Kwong	
	Welcoming drink at SOM (TBC)				<b>Flight 7</b> Aerial Surveillance/ Police/ C&E Ops: Pilots/ Kwong-M.Ng AL. Tsang	



SUN 15 May OFF	MON 16 May D: 0810 - 1700	TUE 17 May D+: 1000 - 1850	WED 18 May			
	<p>Flight 8 SAREX / Top cover (with helicopter): Pilots/ Tang-D.Ng</p> <p>O. Wong</p> <p>PM</p> <p>Flight 9 SAREX / Top cover (with helicopter): Pilots/ Leung-To B. Chong</p>	<p><i>Wash up</i></p> <p>PM</p>				
		Social function (TBC)	Depart Hong Kong			

DETAILED OBSERVATIONS

1. SUPERVISION. Sortie briefs and the mass morning and afternoon briefings were observed and the following points were noted:
  - a. As part of the supervision of flights, an Operational Risk Management (ORM) matrix is used. The crewman assesses the risks, which are discussed with the crew to obtain a score. The score dictates the level of supervision required together with details of the risk. Although a good system crews need to be aware of its limitations. There is danger of risky shift, where the crew agree a lower score to fit manpower levels or to avoid involving a busy outside supervisor, such as the Duty Operations Manager (DOM). It is suggested that consideration is made to having a duty authoriser in attendance for all flights or, when a senior officer is not available, cross authorisation between crews is conducted. This will add an extra layer of supervision and provide a means of developing the younger aircraft commanders.
  
2. OPERATIONS. The audit team were impressed with many of the aspects of the operations room.
  - a. Information required for pre-flight briefing was readily available alongside operation manuals. It was particularly pleasing to see that briefs were conducted from a list and done just before walking for the sortie, keeping the crews in their mission bubble. Excellent facilities for briefing were readily available for all crews with all essential information up to date and easily accessible. The only recommendation for pre-flight briefing is that emergencies should be discussed last (as a focal point just before walking to the aircraft) and in greater detail, particularly within a crew that has not flown together for a while. It is suggested that the implementation of an emergency of the day, allowing the crew to discuss their actions in a hypothetical situation as the last part of the brief.
  
  - b. De-briefing styles varied between individuals and although there was a debriefing card, few crews utilised it. It is recommended that a formal in-brief is adopted in the operations room and an informal area to de-brief the sortie further when required should be identified.
  
  - c. The Aircrew and Operations Staff notice Board which employs a red/green card system to keep all crews and specialisations up to date with information pertinent to them was impressive. This was well controlled and operated and hence a very successful tool.

3. TRAINING. A robust, well-managed and audited training system is in place, however it is not without its limitations.

a. Chek Lap Kok is an extremely busy commercial airport, which offers limited support for fixed wing mandatory continuous training (MCT) and crews often incur huge delays for departure and recovery. The surrounding airfields are equally as busy making dedicated MCT difficult to organise. However, although many aspects of training benefit from a dedicated sortie, certain emergencies could be practiced on return or departure from every sortie. There was no evidence of this, but many opportunities arose where crews were holding for recovery or returning from a long transit. Crews should be encouraged to utilise these opportunities to practice simple emergencies, develop CRM within the whole crew and complete MCT requirements.

4. PUBLICATIONS. A well-organised and sturdy system for ensuring all publications are at the correct amendment state functions efficiently.

a. It was refreshing to see that GFS continues to use hard copies of all publications. This has many advantages over electronic copies, provides a quick method of reference and encourages aircrew to delve deeper into their subject matter.

b. It was noted that all previous recommendations have been incorporated; however as a further suggestion, the Operations Manual should include SAR searches and a standard profile for homings. This will eradicate the use of uncontrolled cribs that were in use for these profiles.

5. FLIGHT SAFETY. The Flight Safety Organisation was explained in detail. A concrete Safety Management System is extremely well run by a highly qualified team and is audited both internally and externally on a regular basis.

a. There is an impressive and comprehensive web site, which is easily accessible to all the Service. This openly illustrates all incidents the Service has reported on and is a sufficient medium for the dissemination of information. Much effort has been made to promote a Just Culture and there is evidence that honest and open reporting is developing.

b. Areas for improvement include the promotion of flight safety awareness amongst all staff at GFS. As a suggestion, the profile of flight safety can be raised by an increase of posters around the unit and all departments having a flight safety representative, no matter how indirect their involvement with flight line operations.

c. A photo of the flight safety team would also identify the hierarchy structure of the team and identify the key members to newcomers and those on the unit not directly involved in aviation, promoting the fact that Flight Safety is everyone's business.

d. Particular care needs to be taken to ensure the position of Flight Safety Officer (FSO) remains with an experienced aviator who is comfortable to push comments and complaints up the chain. For this reason, it is current Naval practice to employ the Senior Pilot as FSO. Your current personalities are ideal for the task but, when the time comes, careful replacement needs to be considered.

e. The final flight safety observation is that while the rotary crews religiously wear helmets with visors down when walking on dispersal, the fixed wing aviators wear no head protection, even when aircraft are engines/rotors running, departing or approaching the dispersal. It is recommended that all personnel on the dispersal wear protection.

6. ENGINEERING. Despite limited Jetstream supplies, a good serviceability rate is achieved by a motivated and dedicated team of dual-qualified engineers that remained flexible and reactive.

a. There seemed to be a strong relationship between the Aircrew and Engineers, enhanced by co-located offices throughout the building, however as a suggestion the interaction between these trades could be further improved by implementation of a line office where the Aircraft Commander signs the tech log. This promotes pre and post flight discussions of minor problems or developing problems and further dissolves barriers between flight crews and engineers. The current practice of signing the tech log in the aircraft does not facilitate this.



## FLEET AIR ARM

17/05/11

### **GFS - FIXED WING VISIT DEBRIEF**

#### 1. **Overview**

A successful visit which highlighted very high standards and the professional manner in which GFS conducts its routine business. Auditors witnessed a variety of sorties and attended ground lectures and formal presentations.

#### 2. **Major Points**

- Crew not utilising Aircrewmen fully
- Unnecessary high workload on pilots
- Aircrewmen not fully integrated in the CRM
- Recommend developing role / position of Aircrewmen

#### 3. **Supervision**

- ORM – Good system with limitations
- Duty Authorisers / external and cross supervision

#### 4. **Operations**

- Good Ops Room organisation
- Briefing – Emergencies Brief
- Debriefing – No formal structure or suitable area
- Value of FW Top Cover
- Recommend 24 hr SAR top cover

#### 5. **Training**

- Robust, well managed and audited
- Utilising training opportunities on every sortie
- CLK – Limitations
- Limited Aircrewmen development
- Dilution of Aircrewmen experience due to mixing FW/RW

#### 6. **Publications**

- Hard copies well controlled and correctly amended
- All major previous pick up points incorporated

- Ops manual to include SAR searches and a standard Radar Homing Profile

7. **Flight Safety**

- Extremely well run and highly qualified team
- Impressive SMS with regular internal / external auditing
- Extensive website
- Position / rank of FSO
- Headgear / sterile area

8. **Engineering**

- JS spares
- Flexible manning
- Aircrew and Engineers offices co-located
- More interaction between Aircrew and Engineers
- Position of Tech log signing

9. **Summary**

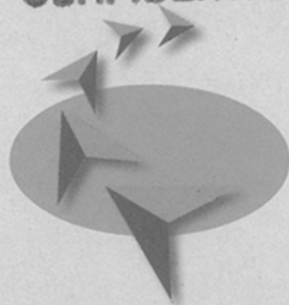
A thoroughly informative visit which has seen both GFS and RN benefit from exchange of ideas and procedures. Overall GFS assessed as performing to very high standards. A formal written report will be forwarded in due course.



R E Smith & S P Kirkham  
Lt Cdr's RN  
750 NAS

CONFIDENTIAL

Appendix X



CONCISE ANNUAL REPORT ON  
THE GOVERNMENT FLYING SERVICE (GFS)  
2014

中國  
香港民航處

CIVIL AVIATION DEPARTMENT  
HONG KONG, CHINA

CONFIDENTIAL

## 1. INTRODUCTION

1.1 A Memorandum of Understanding (MOU) (Annex A) between the then Secretary for Economic Services and the Secretary for Security (S for S) in 1995 requires that Government Flying Service (GFS) operates its aircraft “as if flying for the purposes of public transport” and to comply with the requirements of the Air Operator’s Certificates Requirement Document (CAD 360). The Civil Aviation Department (CAD) therefore carries out surveillance on GFS activities to assure the latter’s operations comply with CAD 360.

1.2 GFS undertakes operational tasks to support law enforcement agencies and emergency services of Hong Kong and carry passengers as the S for S may authorise. The operations of the GFS are continuously monitored by inspecting staff of CAD through regular contacts, meetings and formal inspections.

1.3 During the period, the CAD inspecting officers Captains P Kern, J Lee and A Chong from the Flight Standards Office and Mr. E Leung from the Airworthiness Office conducted the following inspections:

- Three operations and training record inspections
- Eight flight inspections
- Three engineering audits



1.4 The inspecting officers wish to place on record their appreciation of the co-operation shown during the various regulatory oversight activities by all levels of GFS management and staff. It is confirmed that GFS continues to operate to the same standards as for a holder of an Air Operator's Certificate (AOC) where applicable.

#### 1.5 Fleet Composition

1.5.1 The fleet comprises four aeroplanes and seven helicopters as follows:

- Aeroplanes:

2 x British Aerospace Jetstream 4100 (J41)

1 x Moravan ZLIN 242L (a two-seater single engine piston aeroplane for crew training purposes)

1 x Twin Star DA42NG-V1

- Helicopters:

3 x Eurocopter AS332L2 Super Puma

4 x Eurocopter EC155B1

## 2. FLIGHT OPERATIONS ARRANGEMENTS

2.1 GFS staff comprises full-time civil servants with some non-civil service contract (NCSC) staff, and an Auxiliary unit. For the civil servant establishment as of 31 October 2014, there were 221 staff members against the established post of 229, representing a shortfall of 3.5% on the total staff. Organisation charts of GFS are at Annex B.

2.2 For the pilot strength, there were a total of 37 pilots under civil service terms, including 34 operational pilots and three cadet pilots. This was an improvement compared with the total strength of 35 operational pilots in the last report period. Additionally, three experienced pilots were employed on NCSC terms to relieve the shortfall of operational pilots. GFS has an establishment of 43 pilots, including two cadet pilots giving an establishment of 41 operational pilots against the strength of 37 operational pilots representing a shortfall of 9.8%.

- 2.3 The Chief Pilot (Operations), Chief Pilot (Training and Standards) and other management pilots, as in previous report, were noted to be rostered for active operational duties in addition to their administrative duties. Such arrangement does not allow these post holders adequate time to undertake routine management duties.
- 2.4 Flight Planning, performance and loading for both aeroplanes and helicopter operations were completed in accordance with the procedures stipulated in the Operations Manuals, which have been accepted by CAD. The Flight Safety and Quality System remains to be satisfactory and properly managed by qualified personnel. During the report period, GFS filed five engineering related Mandatory Occurrence Reports (MOR) and one operational related MOR. Three of the engineering related MOR were in connection with AS332L2 while the other two were reported on Jetstream 4100 (J41). All MOR filed (Engineering and Operational) were not significant and varied in nature.
- 2.5 The tender for the helicopter replacement has been released on 24 October 2014. It is forecasted that the contract will be awarded at September 2015. The new helicopters will be delivered in phases starting from the 4th quarter of 2017. The full commissioning of the new helicopter fleet will be on the 3rd to 4th quarter of 2018.



### 3. MAINTENANCE SUPPORT ARRANGEMENTS

3.1 The maintenance of the GFS fleet is still provided by GFS Engineering Section under its HKSAR-145 Approval. The overall manpower of the GFS Engineering Section remained unchanged. In the report period, the following changes were accepted by CAD:

- Mr Johnny Yee, succeeded Mr. Vincent Li as Chief Aircraft Engineer after Mr Li retired in January 2014.
- Captain Lawrence CP Wong took over from Captain Michael Ng as Safety Management System Manager in February 2014.

In the report period, Airworthiness conducted the following inspections:

- Eleven C of A renewal exercises and aircraft inspections;
- Three Engineering audits; and
- One HKAR-145 Variation audit.

No significant non-conformance was noted in these inspections.



3.2 GFS fleet is maintained to the required standard and CAD is satisfied with GFS maintenance support arrangement.

3.3 On 29 May 2014, CAD varied the HKAR-145 Approval of GFS to include Bombardier CL-600-2B16 (Challenger 605) in order to provide maintenance support for the operation of this aircraft. The certification process of the aircraft is still in progress at the time of the report. It is expected that the aircraft will be delivered to GFS in late 2015.

#### **4. CONCLUSIONS**

4.1 Improvement was noticed on the number of operational pilots when comparing with the figure last year. However, there was still a shortfall of 9.8 % of operational pilots.

4.2 The Chief Pilot (Operations), Chief Pilot (Training & Standards) and other management pilots were rostered for active operational duties in addition to their routine management duties.



- 4.3 The helicopter replacement programme is in progress.
- 4.4 The Challenger 605 is expected to be delivered to GFS in late 2015.
- 4.5 GFS operational standards are being maintained up to the AOC requirements.
- 4.6 GFS maintains an overall satisfactory standard of engineering and maintenance support.

## 5. RECOMMENDATIONS

	<b>Reference</b>	
5.1	2.2	GFS should review its pilot manpower situation, particularly with a view to addressing the problem of pilot shortfall.
5.2	2.3	GFS should review its operations to balance the flying and management duties of its management staff, such that the effectiveness of its management function would not be undermined.

\*\*\*\*\*



**Memorandum of Understanding between  
the Secretary for Economic Services and  
the Secretary for Security regarding the overview of  
the Government Flying Service by the Director of Civil Aviation**

1. The Attorney General has advised that the operations of the Government Flying Service (GFS) do not classify as flight for the purpose of public transport within the terms of Articles 6 and 92 of the Air Navigation (Overseas Territories) Order 1977 or any legislation which replaces it.
2. Following discussions between the Controller, Government Flying Service ("the Controller") and the Director of Civil Aviation (DCA), the Secretary for Security and the Secretary for Economic Services have reached an understanding on the following matters -
  - (a) The Secretary for Security will require the Controller to ensure that GFS aircraft are operated in accordance with the provisions of the Air Navigation (Overseas Territories) Order [AN(OT)O] as if flying for the purposes of public transport; and to comply with the requirements of the Air Operator's Certificate (AOC) Requirements Document; and to agree acceptable means of compliance with these provisions and requirements with the DCA.
  - (b) In cases where compliance cannot be effected to the satisfaction of the DCA the matter will be referred to the Secretary for Security. If after consideration of the case the Secretary for Security confirms in writing to the DCA that non-compliance with the public transport provisions of the AN(OT)O and the AOC Requirements Document is essential to the public interest then the matter shall rest.



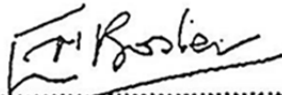
- 2 -

- (c) The Secretary for Economic Services will require the DCA to assess and report upon the competence of the GFS to secure a safe operation and in doing so the DCA will use the provisions of the AN(OT)O including those applicable to flights for the purposes of public transport and also the relevant requirements set out in the AOC Requirements Document.
- (d) In order to make the assessment required by sub-paragraph (c) above officers of the Civil Aviation Department (CAD) will survey, inspect and monitor the GFS on a routine basis. In doing so they will take full note of the scale, scope and nature of tasks undertaken by the GFS and will adopt an approach consistent with the establishing and maintenance of adequate and appropriate standards. As with other operators, the granting of concessions, easements and Exemptions from the AN(OT)O will be subject to demonstration by the operator (GFS) to the satisfaction of DCA of equivalent levels of safety and airworthiness, or alternatively, that non-compliance is deemed essential to the public interest by the Secretary for Security.
- (e) The Secretary for Economic Services shall be kept informed of any non-compliance cases as provided for in sub-paragraphs (b) and (d) above.
- (f) Except as provided for in sub-paragraphs (b) and (d) above, the Secretary for Security will require the Controller to comply at all times with the requirements and directions of the DCA concerning flight operations and airworthiness standards.

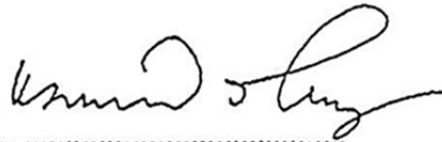


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- (g) The participation of CAD officers in the surveying, inspection and monitoring of GFS operations shall not diminish or relieve the Controller and the Secretary for Security of the responsibility for ensuring safe flight operations.

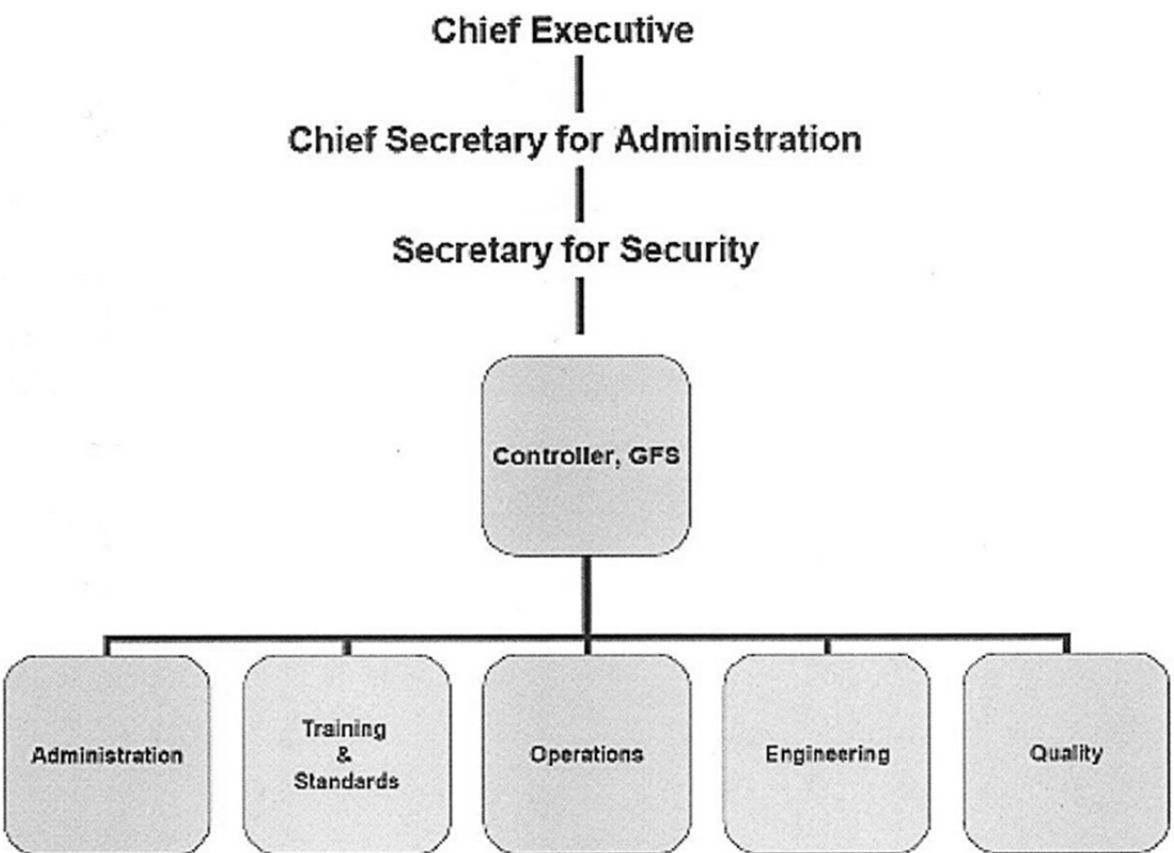


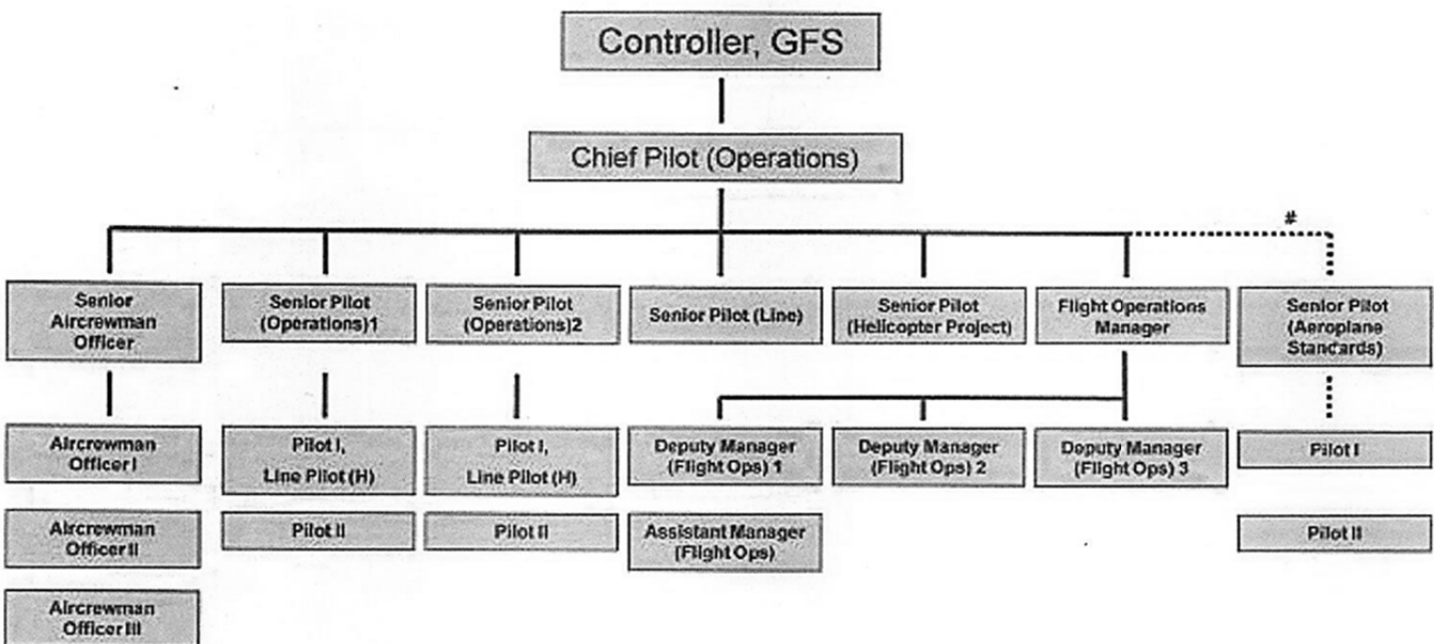
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Mrs E M BOSHIER  
Acting Secretary for Economic  
Services



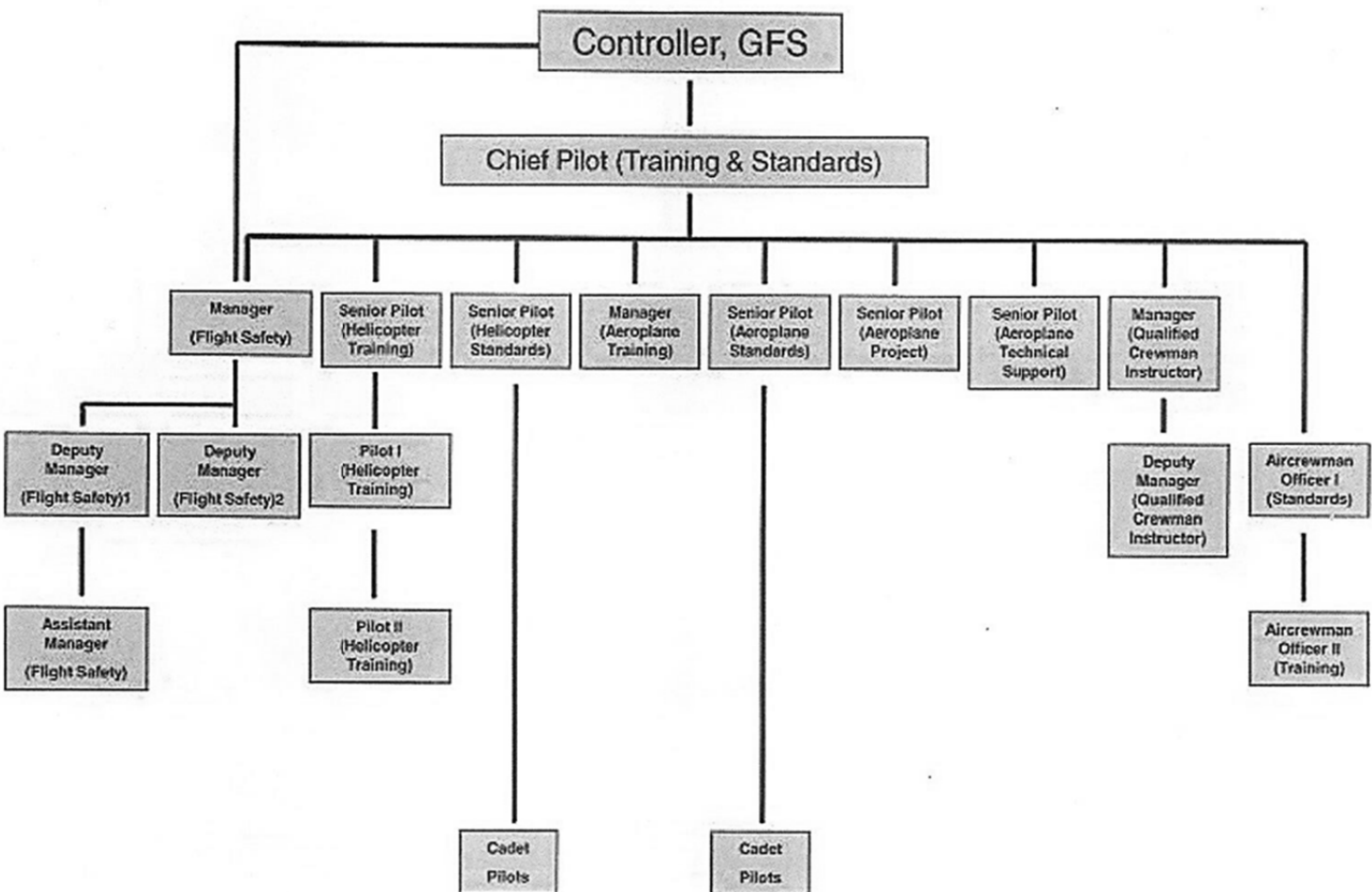
.....  
K J WOODHOUSE  
Acting Secretary for Security

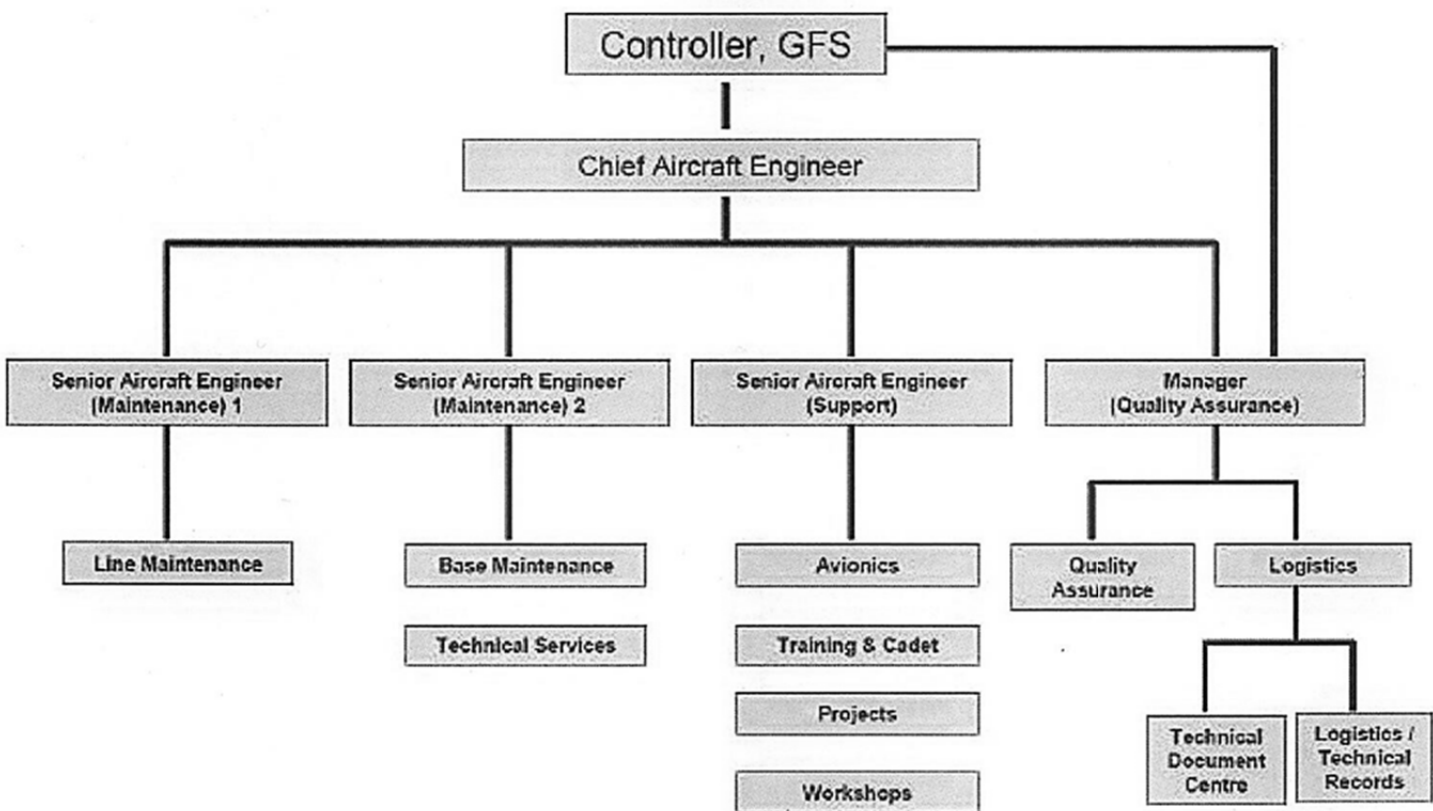
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# Responsible to CP(Ops) for ensuing effective & adequate manning and resources deployment for day to day aeroplane operations





Note: See Engineering Procedures Manuals for further details



民航處  
CIVIL AVIATION  
DEPARTMENT

香港特別行政區政府  
The Government of the Hong Kong Special Administrative Region

05 JAN 2015

Appendix XI

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89

香港大嶼山香港國際機場  
東輝路1號民航處總部  
Civil Aviation Department Headquarters  
1 Tung Fai Road, Hong Kong International Airport,  
Lantau, Hong Kong

電話 Tel: 2910 6146  
圖文傳真 Fax: 2362 4250  
檔案編號 Our ref: CAD FSA AWO/ORG/AD/GFS/A/2A  
來函編號 Your ref: (74) in ENG/M/55(3)

30 December 2014

Controller  
Government Flying Service  
18 South Perimeter Road  
Chek Lap Kok  
Hong Kong

Audit Reference: GFS 3/14

Attn: Mr. Donny Chan – Manager Quality Assurance

Dear Sir,

**HKAR-145 APPROVAL OF MAINTENANCE ORGANISATION  
CLOSURE OF AUDIT FINDINGS - APPROVAL REFERENCE - DAI/176/893**

Further to the audit reference GFS 3/14 carried out at your organisation on 8-10 October 2014.

We acknowledge receipt of HKCAD Audit and Corrective Action Reports (A/CAR), serial numbers 01 to 04.

Following a review of all the completed A/CAR Blocks ③, ④, and ⑤ upon these reports, we would advise that reports serial numbers 01 to 04 are now deemed to be closed. Copies of the completed A/CAR forms are returned with this letter for your records. As these A/CAR's address all the notified findings from the referenced visit, we additionally advise that audit reference GFS 3/14 is now deemed to be closed.

Note, the HKCAD Audit and Corrective Action Report serves the same purpose as the CAD Form Six, Part 4.

Yours faithfully,

(C K Leung)  
Senior Airworthiness Officer  
for Director-General of Civil Aviation  
Encls

Appt	f.i.	Action	Initial
CAE	✓		
M(QA)	✓		
SAE(M)1	✓		
SAE(M)2	✓		
SAE(S)	✓		
AE(L)			
AE(QA)1	✓		
AE(QA)2	✓		
TDC			
Joseph Leung	✓		

7/1  
6/1/15  
8/1/15  
9/1/15  
9/6  
12/1  
12/1  
13/1

致力於安全、有效率及可持續發展的航空運輸系統  
Committed to a Safe, Efficient and Sustainable Air Transport System



## CAD Audit and Corrective Action Report (ACAR)

<b>1. Approval Reference:</b> DAI/76/893	<b>Organisation:</b> Government Flying Services	<b>Audit Reference:</b> GFS 3/14	<b>ACARS/N:</b> 01
<b>Audit Date:</b> 7-10 Oct 2014	<b>Audit Subject:</b> AOC, QA & HKAR-1	<b>Finding Reference:</b> Requirement: HKAR-1	<b>Finding Level*:</b> 4 / 2 / 3
<b>Location:</b> Hong Kong	<b>Airworthiness Officer &amp; signature:</b> Eric CK Leung <i>CKL</i>	<b>Procedure:</b> EPM Vol 2, ch 02-02-03-07	<b>Re-compliance Date:</b> 6 Jan 2015

**2. Details of Finding:**

HKAR-1 sub-section 1.8-13 App. 3, paragraph 1, Issue 2 Revision 9 dated 31 January 2014, set out the requirements for granting authorisation to a person issuing Certificate of Maintenance Review (CMR).

GFS EPM Volume 2, Chapter 02-02-03-07, Qualification and training requirements for CMR was found not amended to reflect the latest revision of HKAR-1 requirements for person authorised to issue CMR.

Responsible Manager / Auditee's signature for acceptance of finding:-

*Donny CHAN*

**3. Identified Root Cause & Proposed Corrective Action(s)**

*(Organisation should complete Block 3 and return this form to the CAD within one month of audit date)*

The EPM procedures related to the issuance of the Certificate of Maintenance Review (CMR) was reviewed. GFS internal circular - AIC S/N CAD-115 has been raised for the latest amendment of HKAR-1 (Issue 2 Rev 9 dated 31 Jan 14). After the review, only EPM 02-05-14-01 & 02 was amended but it was still not sufficient to reflect all of the latest changes on this topic. The qualification and training requirements for CMR on EPM 02-02-03-07 was not updated during that time and it will be revised accordingly. Also, existing procedure for circulation of airworthiness information will be reviewed.

Estimated re-compliance target date:- 31 Dec 2014

HKCAD Acceptance Signature

*CKL* - Reject (go to 6)

**4. Completed Corrective / Re-compliance Action(s)**

Draft EPM 02-02-03-07 was raised to include the qualification and training requirements for CMR and will submit to CAD for approval. Also, existing procedure for circulation of airworthiness information was reviewed, no further amendment was required.

<sup>Draft</sup>  
EPM 02-02-03-07

Supporting procedure reference:-

Issue/Revision status:-

**5. Recommend Closure** *(By Accountable / Quality Manager of the organisation)*

I have reviewed and satisfied with the completed corrective / re-compliance actions stated in Block 4. I recommend closure of this finding.

Name:- *Donny CHAN*

Title:- *M(CAS)*

Sign:- *Donny CHAN*

Date:- *18-12-14*

**6. CAD Rejection**

Letter Ref:

Date:-

**7. CAD Closure**

Airworthiness Officer & sign: *LEUNG Chi-keung* *CKL*

Date:- *30 Dec 2014*

Closed on CAD database by: *CKL*

Date:- *30 Dec 2014*



## CAD Audit and Corrective Action Report (ACAR)

<b>1. Approval Reference:</b> DAI/76/893	<b>Organisation:</b> Government Flying Services	<b>Audit Reference:</b> GFS 3/14	<b>ACARS/N:</b> 02
<b>Audit Date:</b> 7-10 Oct 2014	<b>Audit Subject:</b> AOC, QA & HKAR-1	<b>Finding Reference:</b> Requirement: HKAR-1	<b>Finding Level*:</b> + / 2 / 3
<b>Location:</b> Hong Kong	<b>Airworthiness Officer &amp; signature:</b> Eric CK Leung <i>CKL</i>	<b>Procedure:</b> EPM vol 2, ch 02-02-01-05	<b>Re-compliance Date:</b> 6 Jan 2015

**2. Details of Finding:**

HKAR-1 sub-section 1.8-13 App. 3, paragraph 1.15 (b) requires that person authorised to issue Certificate of Maintenance Review (CMR) should have achieved the agreed standard in an examination.

GFS EPM Volume 2, Chapter 02-02-01-05, Assessment board for authorisation, states that assessment board applies for both initial application and extension of authorisation.

**Authorisation granted to Mr. Lam Wai Man (GFS 238) for issuing CMR was reviewed. No record was found to show that Mr. Lam had been assessed by the assessment board before such authorisation was granted to Mr. Lam.**

Responsible Manager / Auditee's signature for acceptance of finding:- *[Signature]* *Donny Chan*

**3. Identified Root Cause & Proposed Corrective Action(s)**  
*(Organisation should complete Block 3 and return this form to the CAD within one month of audit date)*  
 The QA assessment for Mr. WM Lam CMR authorization application was completed but only the assessment record was not properly filed under his personal approval file.  
 M(QA) will amend the approval record to show the assessment has been done. Also, any other CMR authorization application will be revised if required.

Estimated re-compliance target date:- 31 Dec 2014      HKCAD Acceptance Signature *[Signature]* *Reject (go to 6)*

**4. Completed Corrective / Re-compliance Action(s)**

CMR approval application form for Eric Lam, approval no 238 was amended and attached. Other CMR approval application form for Stanley Tong, approval no 187 was also updated.

GFS Engineering QA  
 Personal Authorisation  
 Application.

Supporting procedure reference:- Approval No 187 & 238      Issue/Revision status:-

**5. Recommend Closure** *(By Accountable / Quality Manager of the organisation)*  
 I have reviewed and satisfied with the completed corrective / re-compliance actions stated in Block 4. I recommend closure of this finding.

Name:- *Donny Chan*      Title:- *m(QA)*      Sign:- *[Signature]*      Date:- *18-12-14*

<b>6. CAD Rejection</b>	Letter Ref:	Date:-
<b>7. CAD Closure</b>	Airworthiness Officer & sign: <i>LEUNG Chi-keung</i> <i>[Signature]</i>	Date:- <i>30 Dec 2014</i>
	Closed on CAD database by: <i>[Signature]</i>	Date:- <i>30 Dec 2014</i>





## CAD Audit and Corrective Action Report (ACAR)

<b>1. Approval Reference:</b> DAI/76/893	<b>Organisation:</b> Government Flying Services	<b>Audit Reference:</b> GFS 3/14	<b>ACARS/N:</b> 03
<b>Audit Date:</b> 7-10 Oct 2014	<b>Audit Subject:</b> AOC, QA & HKAR-1	<b>Finding Reference:</b> Requirement: HKAR-145.65 (c)	<b>Finding Level*:</b> 1/2/3
<b>Location:</b> Hong Kong	<b>Airworthiness Officer &amp; signature:</b> Eric CK Leung	<b>Procedure:</b> EPM vol 2, ch 02-03-01-01	<b>Re-compliance Date:</b> 6 Jan 2015

**2. Details of Finding:**

AMC 145.65(c)(1)4 requires that the independent audit should ensure that all aspects of HKAR-145 compliance are checked every 12 months and may be carried out as a complete single exercise or subdivided over the 12 month period in accordance with a scheduled plan.

**2013 Engineering facilities audit plan was reviewed. Two planned audits for quality assurance department (ref QA13) were scheduled to be performed in March & September 2013. In 2013, only one audit was performed on Quality Assurance (QA) in March 2013. The other planned audit (Sept) had not been performed.**

**The audits for QA department had not been completed in accordance with the audit plan.**

Responsible Manager / Auditee's signature for acceptance of finding:- DONNY CHAN.

**3. Identified Root Cause & Proposed Corrective Action(s)**  
*(Organisation should complete Block 3 and return this form to the CAD within one month of audit date)*  
Engineering facilities audit implementation record for 2013 showed that only one QA internal audit was carried out in Mar 2013. Another planned audit on QA section in Sep 2013 was not done without proper record for audit extension. M(QA) will investigate and revise the record as necessary.

Estimated re-compliance target date:- 31 Dec 2014      HKCAD Acceptance Signature ~~Reject (go to 6)~~

**4. Completed Corrective / Re-compliance Action(s)**

Engineering facilities audit Rescheduling Record for Year 2013 was amended to indicate the QA audit on Sep 2013 was combined with the first QA section audit (QA/17/03/2014) on 2014. CAE has reviewed the case and agreed to revise the plan.

GFS 2013 Engineering  
Rescheduling Audit Plan

Supporting procedure reference:-      Issue/Revision status:-

**5. Recommend Closure** *(By Accountable / Quality Manager of the organisation)*  
I have reviewed and satisfied with the completed corrective / re-compliance actions stated in Block 4. I recommend closure of this finding.

Name:- Donny Chan      Title:- m(QA)      Sign:-      Date:- 18-12-14

<b>6. CAD Rejection</b>	Letter Ref:	Date:-
<b>7. CAD Closure</b>	Airworthiness Officer & sign: <u>LEUNG Chi-keung</u>	Date:- <u>30 Dec 2014</u>
	Closed on CAD database by: 	Date:- <u>30 Dec 2014</u>



## CAD Audit and Corrective Action Report (ACAR)

<b>1. Approval Reference:</b> DAI/76/893	<b>Organisation:</b> Government Flying Services	<b>Audit Reference:</b> GFS 3/14	<b>ACARS/N:</b> 04
<b>Audit Date:</b> 7-10 Oct 2014	<b>Audit Subject:</b> AOC, QA & HKAR-1	<b>Finding Reference:</b> Requirement: HKAR-145.65 (b)	<b>Finding Level*:</b> 4 / 2 / 3
<b>Location:</b> Hong Kong	<b>Airworthiness Officer &amp; signature:</b> Eric CK Leung	<b>Procedure:</b>	<b>Re-compliance Date:</b> 6 Jan 2015

**2. Details of Finding:**

AMC 145.65(b) states that 'The HKAR-145 approved maintenance organisation shall establish procedures acceptable to the Director-General ... to ensure good maintenance practices and compliance with HKAR-145 requirements...'

**Finding No.1 of audit ref: QA/17/03/2014, was reviewed. The cause of non-conformity, correction & preventive action taken were not recorded in the section B of the report and no corrective action had been taken and verified but the report had been closed by the auditor. No corrective action has been taken to address the finding.**

Responsible Manager / Auditee's signature for acceptance of finding:- Donny Chan

**3. Identified Root Cause & Proposed Corrective Action(s)**

*(Organisation should complete Block 3 and return this form to the CAD within one month of audit date)*

Based on minor nature of the audit finding QA/17/03/2014, CAE concluded that item can be downgraded as "Observation only." The required follow-up action has been discussed during the regular CAE/SAE meeting. The related EPM reference will be amended as the corrective action of the finding during next EPM review process. It will be rechecked during next QA audit. Both Section B and C of this audit report will be revised to include the supplementary information as above.

Estimated re-compliance target date:- 31 Dec 2014      HKCAD Acceptance Signature / Reject (go to 6)

**4. Completed Corrective / Re-compliance Action(s)**

Section B of the QA audit report item 1 for QA/17/03/2014 was amended and attached for reference.

GFS Discrepancy Report  
 Supporting procedure reference:- (QA/17/03/2014)      Issue/Revision status:- 18.03.2014

**5. Recommend Closure** *(By Accountable / Quality Manager of the organisation)*

I have reviewed and satisfied with the completed corrective / re-compliance actions stated in Block 4. I recommend closure of this finding.

Name:- Donny Chan      Title:- M (QA)      Sign:-      Date:- 18-12-14

<b>6. CAD Rejection</b>	Letter Ref:	Date:-
<b>7. CAD Closure</b>	Airworthiness Officer & sign: LEUNG Chi-keung	Date:- 30 Dec 2014
	Closed on CAD database by:	Date:- 30 Dec 2014



民航處  
CIVIL AVIATION  
DEPARTMENT

香港特別行政區政府  
The Government of the Hong Kong Special Administrative Region

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圖文傳真 Fax: 2362 4250  
檔案編號 Our ref: CAD FSA AWO/ORG/GFSE/A/2A  
來函編號 Your ref:

24 April 2015

Audit Reference: GFSE 1/15

Controller  
Government Flying Service  
18 South Perimeter Road  
Chek Lap Kok  
Hong Kong

For the attention of: Mr. Donny CHAN – Chief, Independent Monitoring

Dear Sir,

Appt	f.i.	Action	Initial
CAE	✓		28/4
M(QA)	✓		27/4
SAE(M)1	✓		27/4
SAE(M)2	✓		28/4
SAE(S)	✓		28/4
AE(L)			
AE(QA)1	✓		28/2
AE(QA)2	✓		28/4
TDC			
AS2	✓		5/5

#### HKAR-21 ORGANISATION APPROVAL

#### NOTIFICATION OF AUDIT FINDINGS - APPROVAL REFERENCE – A21J/163/0711

Further to audit reference GFSE 1/15 carried out at your organisation on 22 April 2015 regarding your HKAR-21 subpart J approval, the following HKCAD Audit and Corrective Action Reports (A/CAR), serial number 01-02 (level 2 finding) have been issued and are herewith attached for your immediate attention and implementation of the necessary remedial action.

Please return the report to this Office within one month, from the date of this letter. The forms must have **Block 3** only completed, giving full details of the proposed corrective actions to bring the audit finding issue back into re-compliance, within the stated date. These proposed actions can be hand written upon the A/CAR form, or cross referenced to additional supporting data.

Upon receipt of the original A/CAR forms, the CAD will review the proposed corrective actions and advise accordingly.

Yours faithfully,

(Eric CHEUNG)

Senior Airworthiness Officer (Certification)  
for Director-General of Civil Aviation

Encl.



## CAD Audit and Corrective Action Report (ACAR)

<b>1. Approval Reference:</b> A21J/163/0711	<b>Organisation:</b> Government Flying Service	<b>Audit Reference:</b> GFSE 1/15	<b>ACAR S/N:</b> 01
<b>Audit Date:</b> 22 April 2015	<b>Audit Subject:</b> HKAR-21 Subpart J	<b>Finding Reference:</b> Requirement: HKAR 21.265(c) Procedure: EPM 05A-04-06-02 Rev 0	<b>Finding Level*:</b> + / 2 / -3
<b>Location:</b> GFS facilities	<b>Airworthiness Officer &amp; signature:</b> Eric CHEUNG & Bill LAN		<b>Re-compliance Date:</b> 4 June 2015

### 2. Details of Finding:

HKAR 21.265(c) states that "The holder of a design organisation approval shall determine that the design of products, or changes or repairs thereof, as applicable, comply with applicable requirements and have no unsafe feature."

Engineering Procedures Manual (EPM), chapter 05A-04-06-02 Paragraph 2(a) states that "The relevant CVEs will verify the Means of Compliance identifies all the requirements that the Design Change must be shown to comply with, the Means of compliance for each requirement identified is appropriate and all the document references are correct for their respective disciplines."

- a. In the review of the compliance summary report of modification bulletin no. MB-E-011-R0 (Installation of Electrical Harness for Servo Measurement), the following areas were observed.
  - i. The amendment levels of proposed certification basis.
  - ii. The flammability compliance statement for the harness & connector.
  - iii. The structural compliance statement for the trim panel rework
- b. In the review of the compliance summary report of modification bulletin no. MB-A-009-R0 (Introduce additional of 52 new cabin role configurations to the GFS existing configuration) the following areas were observed.
  - i. The acceptable means of compliance for airworthiness code not clear. For example, CS29.803 (Emergency evacuation), there was no clear substantiation data.
  - ii. The amendment of change sheet in Aircraft Flight Manual section 6 did not reflect in the section of Associated Technical Documentations Affected [13a].
- c. The compliance summary report of modification bulletin no. MB-E-12-R0 (Cabin Ceiling Roping Beam Attachment Blanking Cover) only had the letter for the fire proof material but without the copy of burn test certificate.
- d. There was no relevant information in the compliance summary report of Repair Scheme no. RS-D-051-R0 (Dent mark 15 mm x 20 mm on LH outboard wing de-ice porous panel P/N D60-9057-21-01) to substantiate the repetitive inspection at every 10 +/- 2 flying hours.

Responsible Manager / Auditee's signature for acceptance of finding:- **Mr. Donny CHAN**, Chief, Independent Monitoring

### 3. Identified Root Cause & Proposed Corrective Action(s)

(Organisation should complete Block 3 and return this form to the CAD within one month of audit date)

Estimated re-compliance target date:- \_\_\_\_\_ HKCAD Acceptance Signature \_\_\_\_\_ / Reject (go to 6)

### 4. Completed Corrective / Re-compliance Action(s)

Supporting procedure reference:- \_\_\_\_\_ Issue/Revision status:- \_\_\_\_\_

### 5. Recommend Closure (By Accountable / Quality Manager of the organisation)

I have reviewed and satisfied with the completed corrective / re-compliance actions stated in Block 4. I recommend closure of this finding.

Name:- \_\_\_\_\_ Title:- \_\_\_\_\_ Sign:- \_\_\_\_\_ Date:- \_\_\_\_\_

<b>6. CAD Rejection</b>	Letter Ref:	Date:-
<b>7. CAD Closure</b>	Airworthiness Officer & sign:	Date:-
	Closed on CAD database by:	Date:-



COPY

## CAD Audit and Corrective Action Report (ACAR)

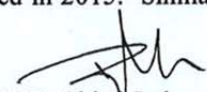
<b>1. Approval Reference:</b> A21J/163/0711	<b>Organisation:</b> Government Flying Service	<b>Audit Reference:</b> GFSE 1/15	<b>ACAR S/N:</b> 02
<b>Audit Date:</b> 22 April 2015	<b>Audit Subject:</b> HKAR-21 Subpart J	<b>Finding Reference:</b> Requirement: HKAR 21.245 GM No. 1 to 21.A245	<b>Finding Level*:</b> 1 / 2 / 3
<b>Location:</b> GFS facilities	<b>Airworthiness Officer &amp; signature:</b> Eric CHUNG & Bill LAU	<b>Procedure:</b>	<b>Re-compliance Date:</b> 4 June 2015

### 2. Details of Finding:

HKAR 21.245 states that "The design organisation shall demonstrate... (a) The staff in all technical departments are of sufficient numbers and experience and have been given appropriate authority to be able to discharge their allocated responsibilities and that these, together with the accommodation, facilities and equipment are adequate to enable the staff to achieve the airworthiness, noise, fuel venting and exhaust emission objectives for the product."

GM No. 1 to 21.A.245 Requirements for approval, paragraph 2 states that "The applicant should show that the personnel available to comply with 21.A.245(a) are, due to their special qualifications and number, able to provide assurance of the design or modification of a product, as well as the compilation and verification of all data needed to meet the applicable CS and environmental protection requirements while taking into account the present state of the art and new experience."

Currently, GFS has four Compliance Verification Engineers (CVEs) to support their Design Organisation activities. However, two CVEs will be retired in 2015 and in 2016 respectively. GFS would be in shortage of CVEs starting next year in supporting their design activities. In addition, two out of eight Design Engineers will be retired in 2015. Similar finding ACAR 01 had been made in the CAD audit of GFS in 2014.

Responsible Manager / Auditee's signature for acceptance of finding:-  **Mr. Donny CHAN**, Chief, Independent Monitoring

### 3. Identified Root Cause & Proposed Corrective Action(s)

(Organisation should complete Block 3 and return this form to the CAD within one month of audit date)

Estimated re-compliance target date:- \_\_\_\_\_ HKCAD Acceptance Signature \_\_\_\_\_ / Reject (go to 6)

### 4. Completed Corrective / Re-compliance Action(s)

Supporting procedure reference:- \_\_\_\_\_ Issue/Revision status:- \_\_\_\_\_

### 5. Recommend Closure (By Accountable / Quality Manager of the organisation)

I have reviewed and satisfied with the completed corrective / re-compliance actions stated in Block 4. I recommend closure of this finding.

Name:- \_\_\_\_\_ Title:- \_\_\_\_\_ Sign:- \_\_\_\_\_ Date:- \_\_\_\_\_

<b>6. CAD Rejection</b>	Letter Ref:	Date:-
<b>7. CAD Closure</b>	Airworthiness Officer & sign:	Date:-
	Closed on CAD database by:	Date:-