

# **FINAL AUDIT REPORT**

## **FLIGHT TRACK COMPLIANCE MONITORING PROGRAM**

For the Goose Bay Office, Department of National Defence, Ottawa Ontario and Five Wing at Goose Bay Labrador

By KPMG Quality Registrar Inc.

January 8, 2001

## INTRODUCTION

Following recommendations issued on May 1st, 1995, the Government of Canada established the Institute for Environmental Monitoring and Research (IEMR) with the purpose of monitoring the environmental effects of Low Level Training Area (LLTA) activities the Department of National Defence coordinates in the Goose Bay Area. Part of the mandate was to have an independent verification of the flight track compliance monitoring (FTCM) program performed. KPMG Quality Registrar Inc. was mandated with performing this independent audit.

The present report includes the observations made during the audit of the FTCM system. The audit included site visits to verify implementation against documented procedures provided by the Goose Bay Office (GBO) of the Department of National Defence. These site audits were done at the following locations:

- A one day meeting in Ottawa at the GBO (August 29, 2000);
- Two days in Goose Bay (GB) (September 5 and 6, 2000) to verify the FTCM system as used by GB and the Allies, then
- Two days at GBO (October 2 and 3, 2000) to verify the 1999 FTCM data.

The FTCM system was audited to identify areas that were implemented according to GBO procedure. The audit process does not guarantee that all low level flights in the Low Level Training Area (LLTA) are analysed according to procedure. The sample size does assure a representative sampling of observations. The audit was meant to determine the level of assurance that the FTCM program is managed in a manner that conforms to documented requirements. The results of the audit are the identification of what is being done according to procedure, and where gaps exist in the system.

Historical data from 1999 was reviewed. Flight track entry was observed for training activities conducted in the afternoon of September 6, 2000.

The following items were reviewed during the audit:

- 1 Roles and responsibilities within GB/GBO;
- 2 The FTCM system used by the GB/Allies and GBO.

This includes a review of GBO's written directives to GB/Allies on the process and procedures for recording of flight data, what parameters are verified to identify possible infractions (serials), how the serials are relayed to GB/Allies, and how the Allies respond to the serials. The response mechanism the Allies use to reply to serials was reviewed. The procedure for the yearly tabulation of infractions and the distribution of the yearly report to stakeholders was audited.

- 3 Training required to perform different responsibilities and the associated reporting timelines;
- 4 Verification and decision points (decision tree) during the reporting system and standards of acceptability; and
- 5 Records required by GBO and GB/Allies to establish audit trail.

**AUDIT PROCESS**

The audit process employed was based on the ISO 14011 series employed for ISO 14001 environmental audits. Objective evidence of three types was collected:

- verbal corroboration between a minimum of two sources if possible;
- records; and
- observations of people performing processes.

**SAMPLE**

A conservative approach was applied in assessing the number of sorties with the potential of having a serial issued. The results are that 3005 sorties out of 3345 had the potential of including flight legs in the <1000 ft Above Ground Level (AGL) range. These 3305 sorties were classified either as low (0-999 ft), medium (1000-2499 ft) or high altitude (2500-4999 ft) based on the majority of the flight being in that altitude band. These sorties had the possibility of including flight legs dipping below the 1000 ft demarcation altitude. A total of 110 sorties done in 1999 were verified against procedures outlined in Table 3.

Table 1

Sorties 0-999 ft	Sorties 1000-2499 ft	Sorties 2500-4999 ft	Unaccounted	Total Sorties <5000 ft
2872	66	340	21	3305

GB has a system where aircraft personnel can file a report to declare infractions they may have done. This reporting system was outside the scope of the audit as it is handled by MCC and not the GBO.

September 2000 observations in Goose Bay of flight tracks being recorded by two Allies on active duty served to review input methods.

A total of 108 Ops Directives were issued during the 1999 flying season. A random sampling was done to ensure the restrictions observed the Ops Directives.

**RESULTS**

A total of 110 sorties from 1999 were sampled. 10 of these sampled sorties did not contain flight legs under 1000 feet, 41 serials were issued, with 1 serial resulting in an infraction. The other serials were either cancelled (2) or closed after receiving an acceptable response from the Ally involved. Serial 35 resulted in an infraction.

✓ A total of 12 sorties included an overflight within 500 m of the edge of a closure. The decision not to flag these as serials is based on the 500 m delineation zone agreed upon during the Kingston Workshop. The distance measurement and thought process behind the decision was documented in

a spreadsheet. Records were kept to document the measurements taken and the decision to not flag the sortie as a serial.

✓ A total of 41 Serials were issued, with 2 being cancelled by GBO due to acceptable explanations provided by the Allies. Such explanations include the Ally having filed a possible overflight report with the Military Coordination Centre Officer (MCCO). The remaining 39 Serials were due to various data entry errors by aircrew, with 1 of the 39 resulting in an infraction. Every Serial issued in 1999 was verified to ensure replies by Allies were received enabling GBO to either close them off or issue an Infraction.

## **1 Roles and responsibilities within GB/GBO**

The role of the GBO office is to analyse data provided by Ally pilots detailing the flight path and altitudes of the sorties executed. Appendix 1 to Annex A (MO 2-7) describes the responsibilities.

The GBO has personnel responsible for:

- Staff pilot who is a qualified fighter pilot, oversees the FTTCM program, reviews the questionable flight tracks with the FTTCM Analyst, and ascertains if serial replies from Allies are acceptable.
- FTTCM Analyst who retrieves GIS data, analyses the data, and identifies possible incursions.

In Goose Bay, the responsibilities surrounding the FTTCM program are:

- MCCO is responsible for day to day management of the training area air space;
- The Mitigation officer acts as a technical resource in wildlife matters;
- The Community Liaison Officer is responsible for coordinating communications between the local interest groups and GB;
- Designated GB personnel is responsible to assist the Allies with the use of the GIS system;
- Each Ally has an Operations Officer who responsible for communications with GBO concerning serials, and keeping records of FTTCM correspondence.

Also, Annex A to MO 2-7 describes the process and responsibilities for closure implementation, data gathering, flight track analysis, documents and records to keep, training, management review and reporting.

✓ Based on the observations at the GBO and GB, these roles and responsibilities were being respected.

## **2 The FTTCM system used by the GB/Allies and GBO.**

It was verified whether appropriate documentation is available where its absence would risk the nonconformance to established policies, regulations, and orders. GBO's written directives to GB/Allies on the process and procedures for recording of flight data, what parameters are verified to identify possible infractions, how the serials are relayed to GB/Allies, and the response the Allies provide to the serials were reviewed.

The procedures employed by GBO to direct GB/Allies on the process and procedures for recording of flight data are listed in Table 2. If a procedure is not documented, but understood and used consistently by different personnel, this was indicated as on the job training/experience.

The procedures that were considered are included in Table 2.

The procedure for the yearly tabulation of infractions and the distribution of the yearly report to stakeholders was audited. Records and witnessed activities served to verify the implementation of MO 2-7 and its Annexes and Appendices.



The procedure outlined in Annex A to MO 2-7 summarises roles and responsibilities for different tasks. In general, the procedure does identify what will be done by what personnel in a clear manner. Some improvement to this procedure could be made by defining timelines for completing tasks such as:

- Paragraph 4.1 states that the GBO3 determines the document control procedures. There is no reference included as to their location.
- Paragraph 4.5 states that the GBO 3 maintains the Web site. Acceptable timelines for the updating of information is not specified.
- Paragraph 6.1. The schedule/timeline for internal audits is defined as periodic. The word "periodic" does not provide enough definition.
- Paragraph 6.2. The annual reporting of the FTFCM data to the IEMR does not specify an acceptable time range of delivery.



As well, the records to keep to demonstrate that "Paragraph 5 – Training" has been completed are not identified.

MO 2-7 summarise the report tabulation and distribution as well as corrective action guidelines. The procedure states the final report will be provided at the International Participants Committee. Data from the 1999 flying season was provided to stakeholders such as the IEMR through a letter and attached material dated March 29, 2000.



The corrective action mechanism in MO 2-7 does not clearly describe:

- Identifying the cause of the problem;
- Assigning responsibilities;
- Planning the steps to correct the situation;
- Keeping records of the action taken;
- Performing a follow-up to assure the solution did eliminate the cause of the problem; and
- Reporting this information to Management Review.

Based on the witnessed evidence, it was determined that the processes within each FTFCM component are effectively implemented when compared to the documented procedures. The current process as summarised in MO 2-7 Annex A is clear, concise and adequate with the exception of a weakness in defining acceptable timelines for some tasks.

➔ It would be to the advantage of GBO to reduce the risk of miscommunication with interested stakeholders in the process by defining timelines for tasks.

### **3 Training required to perform different responsibilities**

The aircrew, GBO staff and staff pilot FTFCM training component was evaluated to determine if it is effectively conducted. A briefing session is provided to aircrew at the beginning of their training mission, while GB and GBO personnel receive on the job training. Two aircrew training sessions held on September 5, 2000 were observed. Three areas were covered: operations, air traffic control, and flight safety.

✓ The aircrew training section of interest (operational regulations) contained information pertaining to the Flight Track Compliance Monitoring (FTFCM) program. The session included:

- Verification that all participants were in attendance
- Overview of operational directive procedures;
- Overview of environmental monitoring system;
- Flying altitudes that are considered low level training activities (<1000 ft);
- Types of closures (human, waterfowl, caribou, raptors, moose, and others) contained in directives;
- Overview of restrictions concerning Churchill River Valley fly overs (angle of cross over);
- Overview of 100 000 km<sup>2</sup> practice area geography, zones, and terrain;
- Reporting flight track using GIS;
- Reporting of wildlife or human sightings outside of delineated boundaries; and
- Explanation that responses will be required when serials are issued.

The aircrew training content relayed the purpose of the FTFCM program and the necessity of respecting Ops Directives relating to closures.

Flight track entry was observed for training activities conducted in the afternoon of September 6, 2000. Personnel receive on the job training from aircrew who have used the GIS system before and/or the Ally Ops Officer. Both Allies audited performed this training in the same manner.

✓ A backup FTFCM Analyst has been trained. As well a procedure is under development at this time to serve as a step by step description of how to retrieve GB data right to issuing and handling serials. The missed serial on April 28 due to the absence of both the main FTFCM Analyst and the backup Analyst is not likely to happen again. Vacation schedules are verified to avoid being absent at the same time and it is unlikely that both Analysts will be sent to an event at the same time again.

The Staff Pilot training was accepted as is based on the credentials/job experience of the personnel involved.

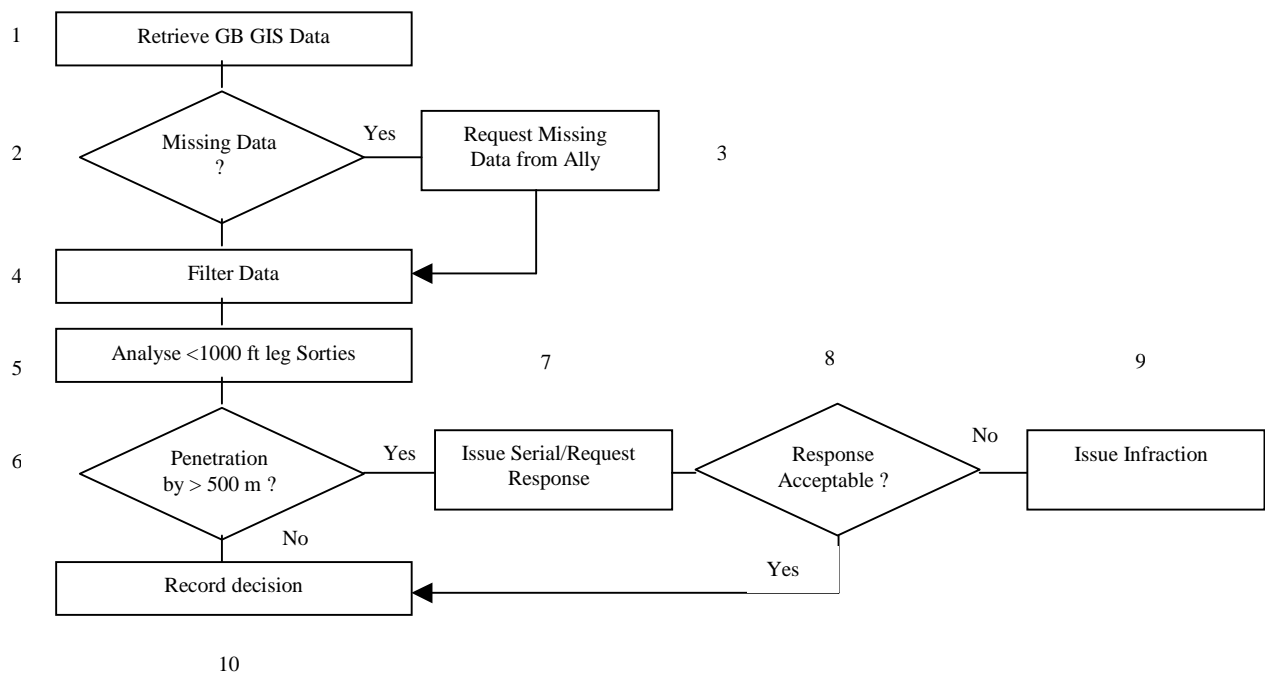


Annex A to MO 2-7 Paragraph 5 describes responsibilities for training in a general sense. The training records to keep are not clearly defined nor is it indicated where they are stored. This includes the training provided to aircrew as described above. For this reason, it was not possible to observe records for this activity. Also, reporting timelines for training exercises were not observed or found in the documentation.

#### 4 Verification and decision points (decision tree) during the reporting system




A “formal” decision tree outlining possible steps and outcomes was not observed. However, the documentation as it stands contains some of the elements of a decision tree, but in a distributed fashion. The following diagram connects the GBO procedure to the process involved.

**Figure 1**



#### Steps

- 1 The process of retrieving GB GIS data is described in draft Standard Operating Procedure (SOP) for Performing the FTCMP Function. The procedure explains how to retrieve data the Allies have entered to record their flight paths.
- 2 The same SOP as in Step one documents the process. The Accounting for Flight Track Data section define the records to verify and the steps to take to get the missing data from the Ally in question. A timeline of 2 days has been set to proceed to follow-up actions.

- 3 The same SOP as in Step one documents the process. The Issuing Missing Report section defines the steps to take to get the missing data from the Ally in question. A timeline of 2 days has been set to proceed to follow-up actions.
-  4 It was observed that sorties are filtered for analysis based on whether the sortie contains a leg below 1000 ft. The Draft SOP does not record this information. Annex A to MO 2-7 does not define the applicable altitudes but it does define what data will be filtered out for other reasons. The Kingston Workshop summary does define the <1000 ft AGL altitude requirement.
- 5 Observed sorties in the 1999 data set that contained legs under 1000 ft were analysed. Sampled several sorties and did not observe any that were flagged as above the 999 AGL altitude that had been flagged incorrectly. The Draft SOP Analyse Flight Track Data for Compliance section describes this process. The Summary Report on the Flight Track Compliance Monitoring workshop held in Kingston Ontario also contains information on altitudes and the 500 m edge zone of restrictions.
-  6 Sampled several sorties, including 3 of the 12 that had a flight leg penetrating a restriction but by less than 500 m. This parameter was documented in the Kingston Workshop records and is again documented in the Draft SOPs. Records of the decision process for the sampled sorties in question were available.
- 7 Observed all the sorties for 1999 data set containing a flight leg penetrating a restriction by more than 500 m. Each serial was recorded and communicated to the Ally in question. This again is documented in the Draft SOP.
-  8 Observed the responses provided by the Allies concerning the serials issued to them. In most cases the response was received within a 2 week time frame. The acceptable timeframe for an Ally to respond is not defined.
- 9 The decision process involved in judging if the response is acceptable resulted in two situation. Either the Ally responded with a correction in the flight path taken (most cases) or the Ally acknowledged that an infraction had occurred. Since it is not possible for the GBO to collect flight path data other than through the aircrew, it is not possible to verify the truthfulness of the aircrew's rendition of the flight path taken. It is unlikely that data entered in the FTTCM GIS system would intentionally be falsified as the aircrew are trained military personnel with a strong code of ethics. Therefore, the assumption must be made at this time, with the available technology, that aircrew do enter flight path data as accurately as possible to the actual flight path taken.
- 10 The decision records for all serials contained responses from the Ally involved. The XL spreadsheet used in the Draft SOP describes how to colour code sorties to indicate their status. Records were randomly sampled for 1999 and each selected sortie was retrieved easily.

- ✓ The analysis by GBO appears to be adequate to correctly identify possible incursions or deviations for the FTFCM system.

## **5 Records required by GBO and GB/Allies to establish audit trail.**

The GBO keeps electronic records of sorties retrieved from GB, serials, e-mail correspondence and faxes from Allies as well as comments that may help in the interpretation of the analysis that was done on a particular sortie (in XL sheet). A backup of the electronic data was available.

The Allies currently keep their flight track plan maps on file and reference the GB GIS log number on them. Since it is difficult to remember exact flight paths after a few days of flying, the maps are kept as a reference in case they are contacted with a Serial. Both of the Allies visited in Goose Bay were keeping their map records. The Ally Ops Officer also keep on paper file the Serials issued by GBO and the responses they have provided. Observed the information for One Ally was kept in a separate binder with all associated information from the GBO and the Ally's reply.

- ✓ The level of record keeping is adequate to provide traceability to decisions made, analysis done, and communications held with the Allies.
- ➔ Improvements could be made to the record keeping for the training provided to GBO personnel and the aircrew in GB.

## **SUMMARY**

Based on objective evidence, the FTFCM system for 1999 was managed in a responsible manner and the processes within the system were effectively conducted when compared to procedure. Data logged in tower logs matched reported sorties, data was analysed as per MO 2-7 and associated documentation, the analysis respected the <1000 ft AGL delineation and the 500 m within the edge of a closure parameters. Records (electronic) were kept of all analysed sorties in 1999, serials issued and the Ally replies received (paper) were recorded, and explicative comments (in XL file) providing input as to why certain decisions were made were available.

Personnel were aware of compliance requirements to the FTFCM system and were observed respecting them.

The following areas represent a risk of nonconformance to established procedures. The corrective action mechanism as defined in MO 2-7 Annex A is conducted in a manner to ensure follow through on identified serials. However, the written procedure does not reflect this. Certain improvements can be made by defining timelines for performing tasks in MO 2-7 and associated documentation, as well as defining what records to keep as objective evidence that training of GBO and the GB aircrew has occurred. The reporting timelines in Annex A to MO 2-7 also require more precision.

**Table 2**

Procedure	GBO		GB	
	Documented	Other	Documented	Other
Training of personnel for flight track entry: MCCO	-	-	-	On the job experience
Ops Officers	-	-	Training checklist	On the job experience
Flight personnel	-	-	Slide show	On the job experience
Training of personnel for flight analysis: Flight track analyst	SOP for Performing the FTCMP Function (draft) MO 2-7 Annex A	On the job experience	-	-
Staff Pilot	Appendix 1 to Annex A to MO 2-7	On the job experience	-	-
Recording of flight tracks by flight crew	-	-	MO 2-7 Annex A paragraph 2	On the job experience
Flight track data capture process for GBO	SOP for Performing the FTCMP Function (draft) MO 2-7 Annex A	On the job experience	-	On the job experience
Parameters defined to qualify a sortie as containing a Serial	SOP for Performing the FTCMP Function (draft)	On the job experience	-	-
Serial notification to Allies	SOP for Performing the FTCMP Function (draft) MO 2-7 Annex A List of persons to contact at GB	On the job experience	-	-
Serial response process and time requirements from Allies	MO 2-7 Annex A paragraphs 3.4, 3.5, 3.6 SOP for Performing the FTCMP Function (draft)	On the job experience	-	-
Parameters defined to qualify a Serial as infraction	SOP for Performing the FTCMP Function (draft)	On the job experience	-	-
Corrective / Preventive actions originating from GBO involving GB and Allies	MO 2-7 Annex A paragraph 3.7	-	MCC Occurrence Reports (not part of flight track monitoring system scope for GBO)	-
Records required to establish audit trail	SOP for Performing the FTCMP Function (draft) MO 2-7 Annex A	-	MCC Daily Traffic Count Tower Log (314s) Daily AMTIC Flying Activity Flight Plans	-
Internal audits	Annex A to MO 2-7	-	-	-
Yearly tabulation of sorties and infractions and report distribution	MO 2-7 paragraph 4, MO 2-7 Annex A paragraph 3.9	-	-	-

Note: "-" indicates that this is not of interest.

	<b>Table 3</b>	<b>GB Sortie Number</b>	<b>Above LLTA</b>	<b>Serial Issued</b>	<b>Response Received</b>	<b>Serial closed</b>	<b>Status OK</b>	<b>Comments</b>
1	March 30, 1999	19992280					x	Start of new flying season
2		19992257					x	
3		19992282					x	
4		19992271		Serial 1	x	x	x	Response dated April 6, 1999
5		19992272		Serial 1	x	x	x	Response dated April 6, 1999
6		19992273		Serial 1	x	x	x	Response dated April 6, 1999
7		19992274		Serial 1	x	x	x	Response dated April 6, 1999
8		19992275		Serial 1	x	x	x	Response dated April 6, 1999
9		19992260		Serial 2	x	x	x	Response dated April 6, 1999
10	April 9, 1999	19992353		Serial 3	x	x	x	Response dated April 13, 1999
11	April 10, 1999	19992364		Serial 4	x	x	x	Response dated April 14, 1999
12	April 12, 1999	19992371					x	
13		19992368					x	
14		19992373					x	
15	April 28, 1999	19991494		*				* Missed serial. Both operators were at workshop in Kingston On.
16		19992490					x	
17		19992485					x	
18	May 3, 1999	19992535		Serial 5	x	x	x	Response dated May 3, 1999. Improbable, as data was analysed on May 4, 1999.
19	May 7, 1999	19992572					x	Fourth day of new deployment.
20		19992569					x	
21		19991565					x	
22	May 8, 1999	19992589		Serial 6	x	x	x	Response dated May 12, 1999
23		19992605		Serial 7	x	x	x	Response dated May 12, 1999
24	May 13, 1999	19992627	x					Last day of given deployment.
25		19992630					x	
26		19992625	x					
27		19992635					x	
28		19992632					x	
29		19992630		Serial 8	x	x	x	Response dated May 15, 1999
30	May 14, 1999	19992642		Serial 9	x	x	x	Response dated May 18, 1999
31		19992646		Serial 9	x	x	x	Response dated May 18, 1999
32	May 21, 1999	19992796		Serial 10	x	x	x	Response dated May 27, 1999
33		19992792		Serial 10	x	x	x	Response dated May 27, 1999

	<b>Table 3</b>	<b>GB Sortie Number</b>	<b>Above LLTA</b>	<b>Serial Issued</b>	<b>Response Received</b>	<b>Serial closed</b>	<b>Status OK</b>	<b>Comments</b>
34		19992791		Serial 10	x	x	x	Response dated May 27, 1999
35	May 27, 1999	19992859		Serial 11	x	x	x	Response dated May 29, 1999
36	May 28, 1999	19992924		Serial 12			x	Cancelled. GB had submitted MCC Occurrence Report.
37		19992891		Serial 13	x	x	x	Response dated April 2, 1999. Obvious dating error.
38	May 29, 1999	19992907		Serial 14	x	x	x	Response dated April 3, 1999. Obvious dating error.
39		19992906		Serial 14	x	x	x	Response dated April 3, 1999. Obvious dating error.
40		19992900		Serial 14	x	x	x	Response dated April 3, 1999. Obvious dating error.
41	June 1, 1999	19992941					x	First day of new deployment.
42		19992947	x					
43		19992944					x	
44		19992950	x					
45		19992943					x	
46		19992941		Serial 15	x	x	x	Response dated June 3, 1999
47	June 7, 1999	19993016	x					
48		19993021					x	
49		19993013					x	
50	June 14, 1999	19993123					x	First day of new deployment and last day of previous deployment.
51		19993119					x	
52		19993121					x	
53	August 9, 1999	19993166					x	First day of flying after strike.
54		19993170					x	
55		19993164					x	
56		19993169					x	
57		19993163		Serial 16	x	x	x	Response dated August 11, 1999.
58	August 13, 1999	19993220		Serial 17	x	x	x	Response dated August 17, 1999
59	August 19, 1999	19993270	x					
60		19993276	x					
61		19993281					x	
62		19993272					x	
63		19993275					x	
64		19993278					x	
65	August 24, 2000	19993332		Serial 18	x	x	x	Response dated September 8, 1999
66		19993345		Serial 19	x	x	x	Response dated September 10, 1999

	<b>Table 3</b>	<b>GB Sortie Number</b>	<b>Above LLTA</b>	<b>Serial Issued</b>	<b>Response Received</b>	<b>Serial closed</b>	<b>Status OK</b>	<b>Comments</b>
67		19993337		*			x	* Within closure, but less than 500 m
68	August 26, 1999	19993419		Serial 20	x	x	x	Response dated September 7, 1999
69	August 27, 1999	19993445		*			x	* Within closure, but less than 500 m
70	August 30, 1999	19993471		Serial 21	x	x	x	Historical data available for original track. Response dated September 2, 1999.
71		19993486					x	
72		19993475					x	
73		19993490					x	
74		19993473		Serial 22	x	x	x	Response dated September 2, 1999
75		19993480		Serial 23	x	x	x	Response dated September 2, 1999
76	September 3, 1999	19993585		Serial 24	x	x	x	Response dated September 7, 1999
77	September 9, 1999	19993686					x	Data appended to 19993688.
78		19993660					x	
79		19993674					x	
80	September 13, 1999	19993728		Serial 25	x	x	x	Response dated September 15, 1999
81		19993735		Serial 26	x	x	x	Response dated September 15, 1999
82	September 14, 1999	19993760		Serial 27	x	x	x	Response dated September 17, 1999
83		19993764		Serial 28	x	x	x	Response dated September 17, 1999
84		19993792		Serial 29	x	x	x	Response dated September 17, 1999
85	September 15, 1999	19993791		Serial 30	x	x	x	Response dated September 17, 1999
86		19993798		Serial 31	x	x	x	Response dated September 17, 1999
87		19993799		Serial 31	x	x	x	Response dated September 17, 1999
88	September 16, 1999	19993807		Serial 32			x	Cancelled. GB Ally had acceptable explanation to cancel.
89	September 22, 1999	19993891		Serial 33	x	x	x	Response dated September 24, 1999
90	September 23, 1999	19993899		Serial 34	x	x	x	Response dated October 4, 1999
91	September 24, 1999	19993901					x	Cross checked to ensure Ops Directives matched GIS closures for this day.
92		19992908					x	
93		19993917					x	
94		19993909		<b>Serial 35</b>	x	x	Infraction.	Response dated September 28, 1999. Ally acknowledged that infraction had occurred.
95		19993920		Serial 36	x	x	x	Response dated September 28, 1999
96		19993916		Serial 37	x	x	x	Response dated October 4, 1999
97	September 27, 1999	19993943		Serial 38	x	x	x	Response dated October 4, 1999
98	September 28, 1999	19993878		Serial 39	x	x	x	Response dated September 30, 1999

	<b>Table 3</b>	<b>GB Sortie Number</b>	<b>Above LLTA</b>	<b>Serial Issued</b>	<b>Response Received</b>	<b>Serial closed</b>	<b>Status OK</b>	<b>Comments</b>
99		19993985		Serial 40	x	x	x	Response dated September 30, 1999
100	September 29, 1999	19994010		Serial 41	x	x	x	Response dated October 4, 1999
101	October 6, 1999	19994129		*			x	* Within closure, but less than 500 m
102	October 8, 1999	19994224					x	
103		19994238					x	
104		19994212	x					
105		19994255					x	
106	October 13, 1999	19994313					x	
107		19994318	x					
108		19994335	x					
109		19994347					x	
110		19994355					x	