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CAIMS – References Summary

Eff Global Express Aircraft

By Dominique Lessard – Customer Support Engineering

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Over the years, several CAIMS articles have been published, the following reprinted articles will provide you with key document references for understanding and troubleshooting with CAIMS/PMAT.

The advisory wire BD700T-0002, Rev 3 “CAIMS Member System Functionality Status”, informs all operators of the status of each system. This advisory wire is revised every time new functionality or changes are introduced. It also provides a list of all Member System Smart LRUs and the status for each function. General guidelines are provided in the cases where functionality is not complete.

Here is a list of the CAIMS articles included:

- Hints and Tips # 1 – Can't Get CAIMS Active
- Hints and Tips # 2 – Easy Navigation
- Hints and Tips # 3 – How to Print a CAIMS Screen
- Hints and Tips # 4 – The Active Fault Report
- Hints and Tips # 5 – Publication CD Clarification
- Hints and Tips # 6 – IMT Failure Code Lookup
- Hints and Tips # 7 – CAIMS Error messages

The Bombardier Aerospace customer information website www.cic.bombardier.com has a dedicated CAIMS page, here you will find information on CAIMS and reference to all the related Maintenance Tasks, Advisory Wires, Service Bulletins and *infoservice* articles.

In addition, I would like to highlight that in the past year a number of rejected PMAT units have been identified as “No Fault Found”. One of the reasons why these units are showing NFF is that when they are removed and returned to the vendor, the reason for removal is not clearly specified by the operator. It is very difficult for the vendor to isolate the defects of the unit without this information. When you remove an LRU (PMAT) from the aircraft and return it to the vendor, please make sure to include a detailed explanation.

Another option would be to contact your local Field Service Representative (FSR) when a PMAT needs to be replaced, your FSR will then create a condition report and complete the appropriate form dedicated to the PMAT.

This information is used to monitor and create trends for the PMAT removals. The availability of such information will provide useful reference for future software/hardware upgrades. Your cooperation will be very helpful and greatly appreciated.

We hope this special issue of *infoservice* covering the CAIMS Hints and Tips will be useful to you as a reference source.

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Business Aircraft

CAIMS Hints and Tips #1 – Can't Get CAIMS Active

Eff Global Express Aircraft

By Chantal Mercier – Customer Support Engineering

ATA 45-00

This is the first of a series of “Hints and Tips” which will be regularly covered in *infoservice*.

Aircraft 9005 recently encountered a situation where the “STORED FAULTS” and “SYSTEM DIAG” bezels were not being displayed after the CAIMS application was initialized on the PMAT (see figure 1). This is an indication that CAIMS is NOT set ACTIVE. As a consequence, functions such as STORED FAULTS and SYSTEM DIAGNOSTICS are not made available and NVM DOWNLOAD/CLEAR, BUS READER and DEFINE AIRCRAFT ID are available but do not work.

When the situation described above happens, do as follows:

1. First check the interlocks. The HOST Fault Warning Computer (FWC) requires both WonW and indicated airspeed less than or equal to 50 knots to set CAIMS ACTIVE. On the CAIMS window, a red dot at the lower right-hand side as well as the text “The interlock is NOT satisfied” on the lower-left hand side means that CAIMS is detecting that one or both of the interlocks are not satisfied (see Figure 1). The ENVIRONMENT CONTROL page indicates the status of each individual interlock (see Figure 2).

1. After the interlocks are satisfied, request CAIMS ACTIVE manually on the ENVIRONMENT CONTROL page by selecting “Requested” in the “CAIMS Active” box or restart CAIMS.

1. If CAIMS does not become ACTIVE after doing the above steps, this indicates that the FWC is not getting the request on the ARINC bus from the PMAT or none of the FWCs are returning “HOST” status on the ASCB. First make sure that the harness is correctly connected and secured to the PMAT and the aircraft. If the harness was properly secured when the problem happened, the most probable cause is open ARINC 429 wiring in the PMAT harness. Check for continuity from harness connector P251/pin 13 to connector P248/pin 14 and from connector P251/pin 15 to connector P248/pin 15.

On aircraft 9005, it was discovered that wires on pins 13 and 15 of connector P251 had pulled out of their pins. A complete troubleshooting procedure will soon be incorporated in the Global Express Fault Isolation Manual to address this particular condition.



Figure 1

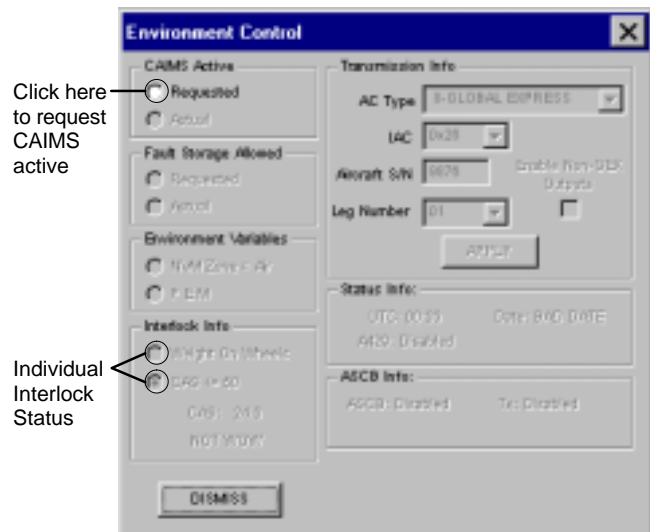


Figure 2

CAIMS Hints and Tips #2 – Easy Navigation

Eff. Global Express Aircraft

By Chantal Mercier – Customer Support Engineering

ATA 45-00

Did you ever get kicked out of CAIMS or get inadvertently brought to a screen that is higher up in the screen navigation instead of lower down where you wanted to go? If you are a frequent user of CAIMS, chances are that you have answered YES to this question. By following a few easy steps when you navigate in CAIMS, this will never happen again. Let us first understand what is happening when everything seems to go wrong. The bad situation always happens when “ENTER” is selected on the AUXILIARY CURSOR while the cursor box is still around the first bezel. By default, CAIMS always sets the cursor box on the first bezel position. The first bezel position is reserved for EXIT MAINT (exit CAIMS) or other items such as “EXIT SUBSYS” (exit subsystems). See Figure 3. Thus, if the cursor box is not moved to another position before “ENTER” is selected on the AUXILIARY CURSOR, the “surprising” effect happens as described. Always do your bezel navigation as follows:

Never use the ENTER selection from the AUX CURSOR
(Note: this selection will no longer be made available in the upcoming CAIMS 7.1 software)

Position the cursor box around the bezel of your choice by selecting the bezel once (for focus). The white cursor box will show around the bezel

Execute the navigation request by “double-clicking” the bezel you just put in focus. The cursor box will momentarily show in red

By following the above steps, CAIMS will always bring you where YOU want to go.

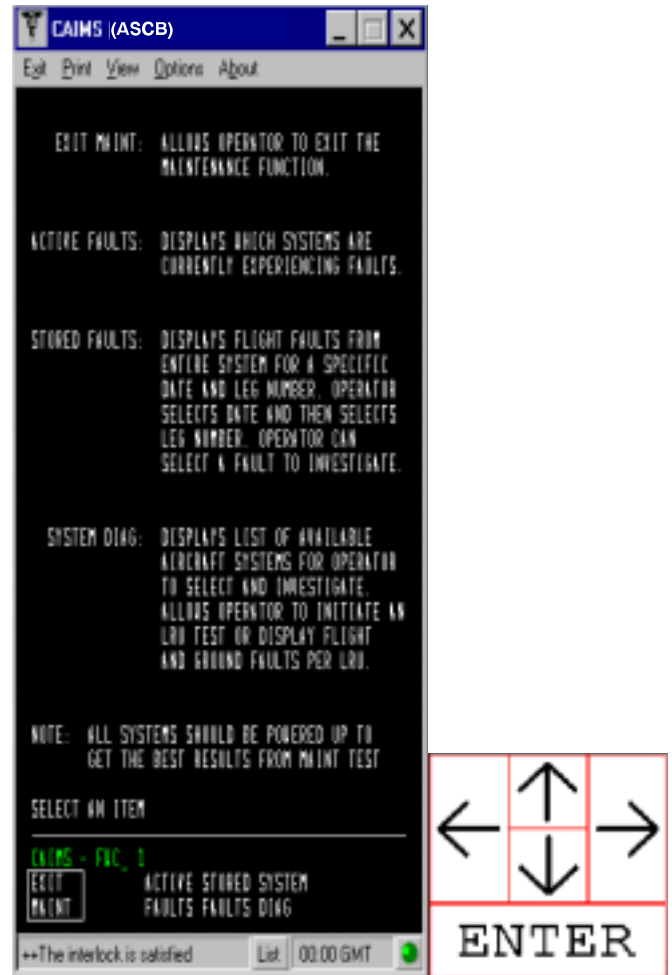


Figure 3

CAIMS Hints and Tips #3 – How to Print a CAIMS Screen

Eff. Global Express Aircraft

By Chantal Mercier – Customer Support Engineering

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One question that is often asked by operators is, “How do I print a STORED FAULTS report?” To answer this question, the following easy instructions will not only enable you to print STORED FAULTS, but will also allow you to be able to print any CAIMS screen. There are two methods by which this can be done: by “Print Screen” and by “Dump Screen”.

The “Print Screen” method allows you to copy and print the screen image in a bitmap (bmp) format using the “Paint” application. See Figure 1 to do this:

- Press the “Print Scrn” key on the keyboard. This will copy the entire screen content to the clipboard. If you want only the selected screen to be printed, press the “Alt” key at the same time as the “Print Scrn” key.
- In the “Start” menu, select “Programs – Accessories – Paint”.
- In the “Edit” menu, select “Paste”.
- In the “File” menu, select “Print”.

The “Dump Screen” method allows you to copy and print the content of the screen in a text (scn) format using the “WordPad” application. See Figure 2 to do this:

- Navigate to the CAIMS screen of your choice (make sure the CAIMS screen is activated).
- Select the “Fn” key at the same time as the “D” key. A “Save As” window will appear.
- Save the file under the c:\User directory.
- In the “Start” menu, select “Programs – Accessories – WordPad”.
- In the “File” menu, select “Open”. The “Open” window will come up.
- In the “Open” window, find the file you just saved. You will need to select files of type “All Documents” in order to see the “scn” file you saved. Select your file and then select “Open”.
- In the “File” menu, select “Print”.

If you do not have a color printer, the “Dump Screen” method will produce a clearer result than the “Print Screen” method. The dump screen file provides complete data and text color at the time it was dumped as well as the applicable navigation data from the LDI.

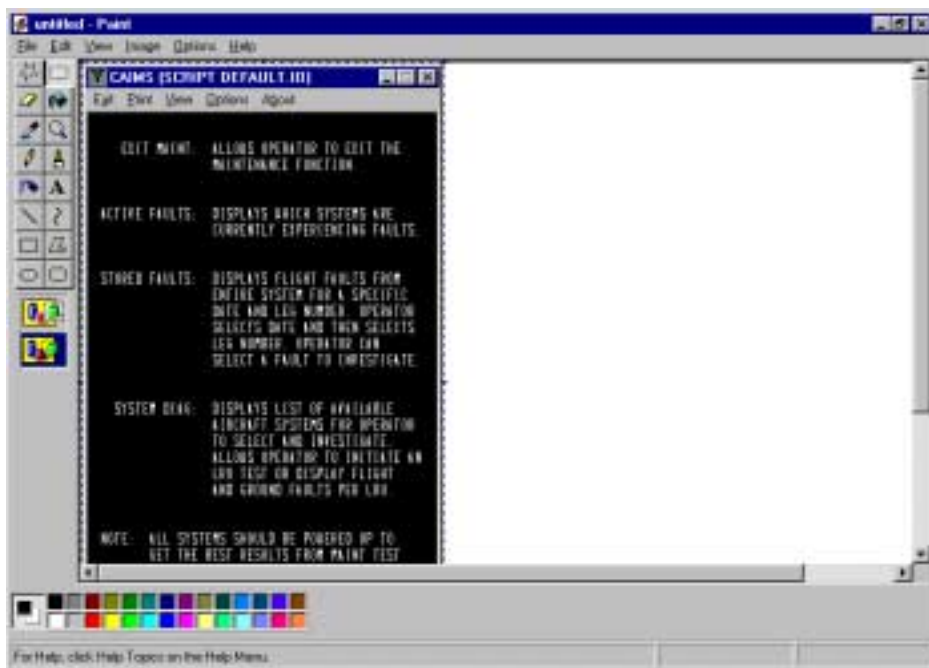


Figure 1

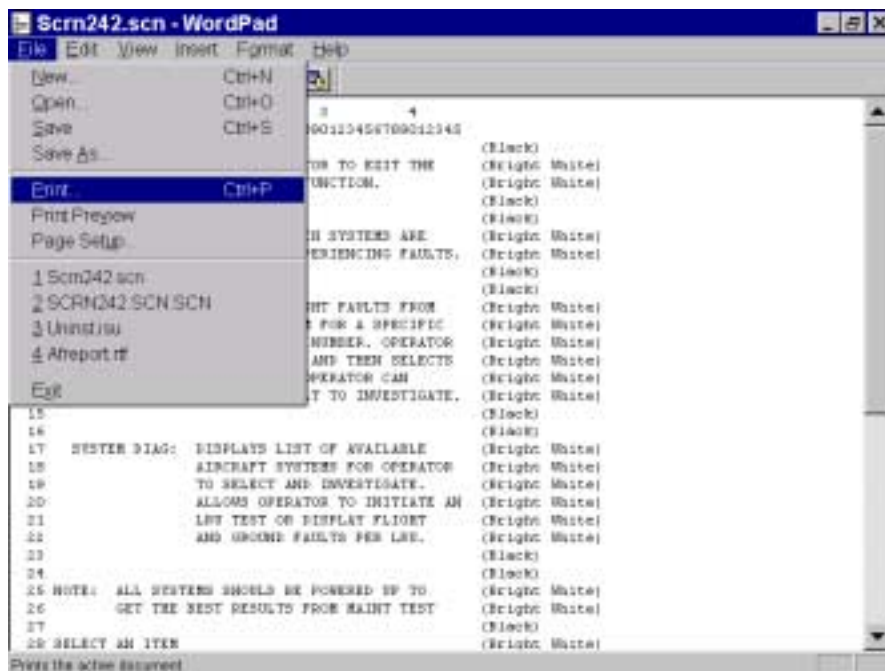


Figure 2

CAIMS Hints and Tips #4 – The Active Fault Report

Eff. Global Express Aircraft

By Chantal Mercier – Customer Support Engineering

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The ACTIVE FAULTS REPORT is a report that can be saved as a text file or printed to a printer connected to the PMAT. When the PMAT is powered and CAIMS or FDE CORRELATION is running, the ACTIVE FAULTS REPORT can be printed by pressing the “PRINT MAINT REPORT” switch (for aircraft POST SB 700-45-001). The report can also be printed by selecting in CAIMS “Print – Act Flts To Printer” or can be saved to a text file by selecting “Print – Act Flts To File” (see Figure 1).

The report sorts all the ACTIVE FAULTS in order of FDE (Flight Deck Effect) to which they are correlated. Thus, if a CAS message shows on the report, it does not necessarily mean that this CAS message was active at the time the report was printed. It simply means that the CAS message may have occurred because of the ACTIVE FAULT present. For each fault, the report provides the following data:

- The ATA and the LRU reporting the fault
- The time the fault was triggered
- The fault code, fault type, fault name, and symptom text (if applicable)
- The relevant technical publication references

Figure 2 shows an example of a typical FAULT on an ACTIVE FAULTS REPORT page.

We are aware that some operators may have noticed that the report is often filled with faults not related to the fault of interest. The report shows many FLIGHT CONTROL related failures and because these failures are linked to many different CAS messages, they fill up the report (which has a limited length of 5 pages), leaving no room for real faults. In most instances the FLIGHT CONTROL internal faults which look like “FLT CONT XX FAULT [FCU X]” are nuisance faults. Bombardier is presently working with Sextant on a solution scheduled to be implemented in the next FCU software load. Until such a solution is implemented, operators can do printouts of what they see on the PMAT using methods described in previous CAIMS Hints and Tips #3.

Figure 1:

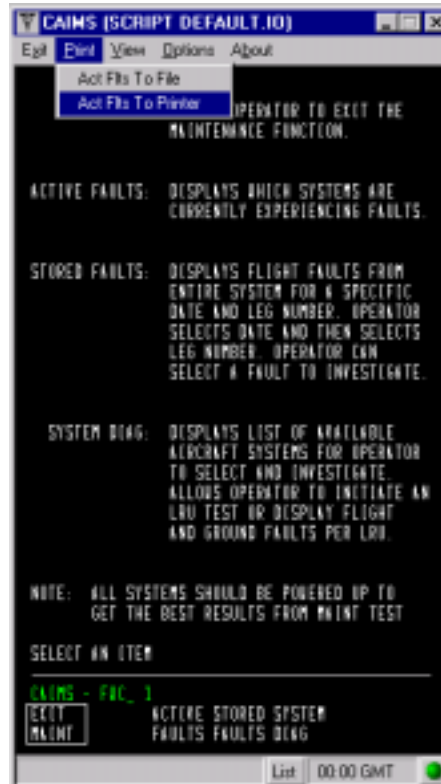
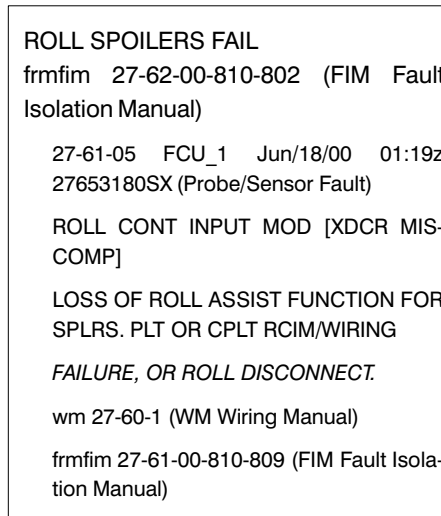


Figure 2:



CAIMS Hints and Tips #5 – Publication CD Clarification

Eff. Global Express Aircraft

By Dominique Lessard – Customer Support Engineering

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The purpose of this article is to give you additional information regarding the 2 versions of CDs that you have recently received.

It's extremely important to use the right CD with your PMAT to make sure that you will be able to visualize the publication correctly and that your CAIMS LDI is the proper one.

The "Pre-SB 700-45-008" CD should be used if the Service Bulletin 700-45-008 **has not been incorporated** on your aircraft, meaning that your PMAT's part number is 7023300-907 using CAIMS software 6.1

The "Post-SB 700-45-008" CD should be used if the Service Bulletin 700-45-008 **has been incorporated** on your aircraft, meaning that your PMAT's part number is 7023300-909 using CAIMS software 7.1

If you have not received the appropriate CD, contact the distribution group at 1-866-273-2638 and they will ensure that you get the appropriate CD.

Once the operators have incorporated SB 700-45-008, we will revert to one published version of the CD.

	CAIMS (Software Version)	Dynatext (Publication Viewer Version)	LDI (Database)
PMAT 7023300-909	7.1	4.2	Toucan.022 or Flamingo.023
PMAT 7023300-907	6.1	3.11	Toucan_B.022 or Flamingo_B.023

CAIMS Hints and Tips #6 – IMT Failure Code Lookup

Eff. *Global Express Aircraft*

By *Dominique Lessard – Customer Support Engineering*

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The “IMT Failure Code Lookup” is a new function available with CAIMS 7.1. This new feature will provide you with information regarding specific IMT systems fault codes (A/T, FMS, EDS, ASCB, IOP, WX, GPWS, RSB, LIGHT, TCAS, and ADC). This function is available through “Start/Aircraft Diagnostic/IMT Failure Code Lookup”. Refer to Figure 1 below.

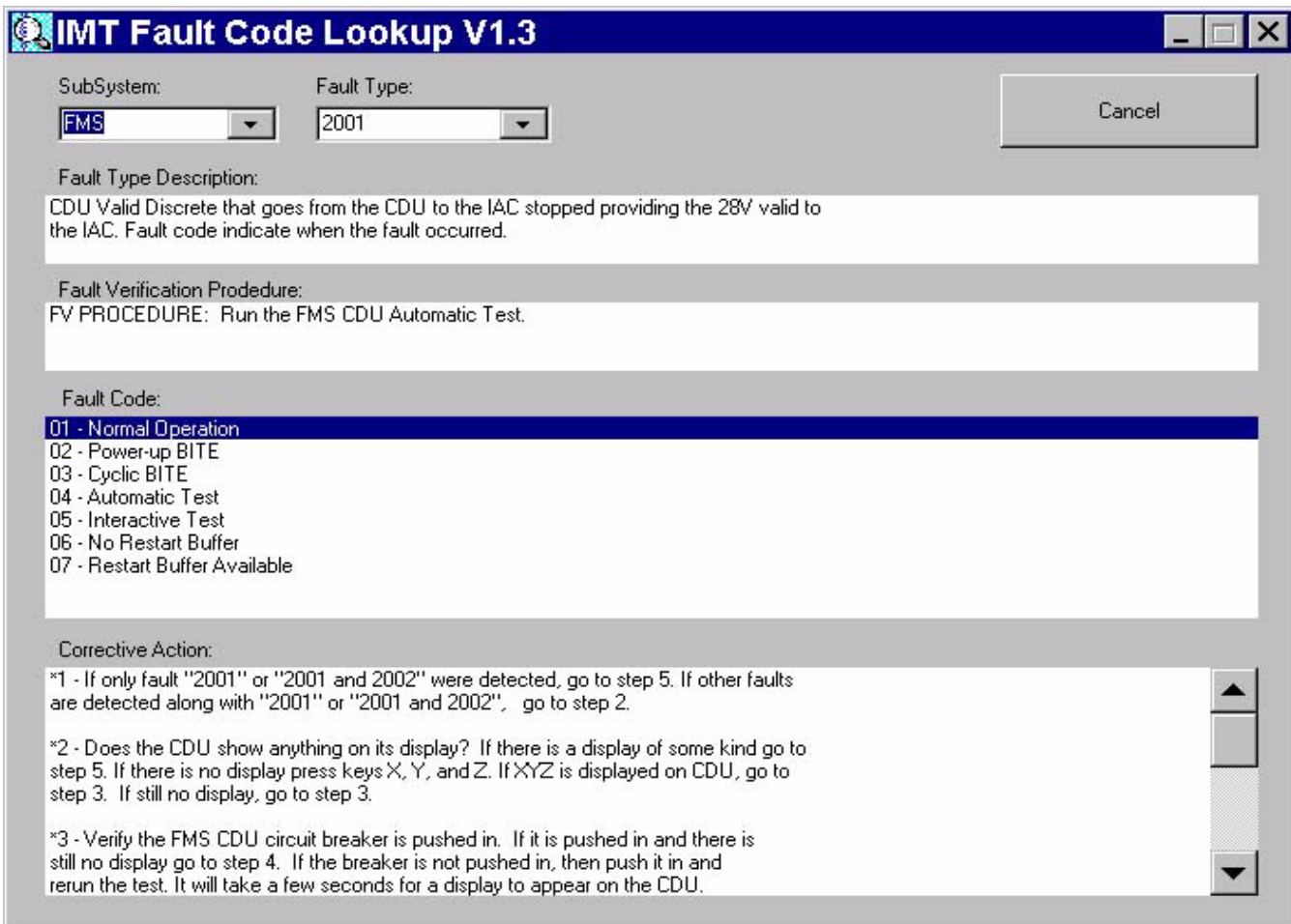


Figure 1

When Flamingo.023 (which is included on the publication CD released on October 2001) will be installed through the autoloader function you will have to manually update the IMT fault code lookup function. Remember this is only applicable with CAIMS software 7.1 (PMAT 7023300-909).

In order to have the IMT fault code lookup fully functional you will need to perform the installation procedure, steps 1 to 12, as described below (in the future, we aim to have the process done automatically).

Installation Procedure

- Start
- Program
- Windows NT explorer
- Under "C:/Tools" directory
- Click on "ODBC Administrator"
- In the "Data Sources" window select the "IMT_V1 (Microsoft Access Driver (*.mdb))" see Figure 2 below.

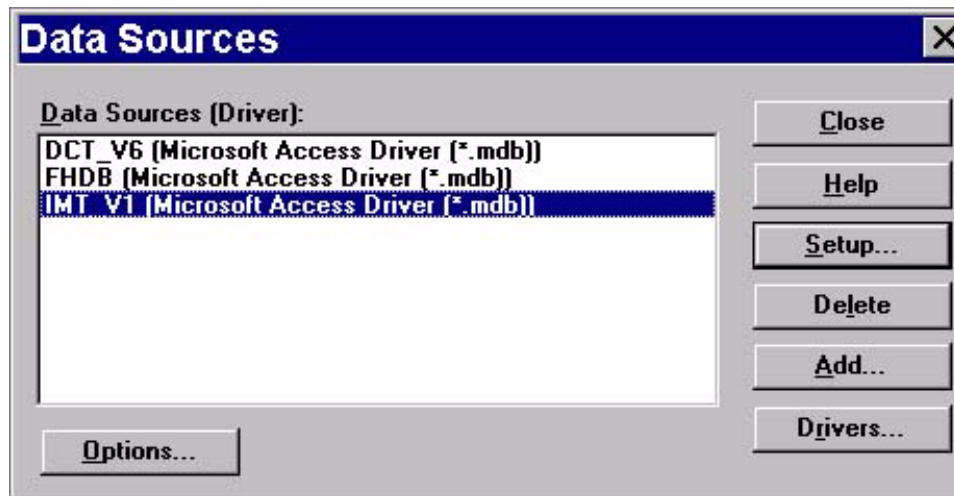


Figure 2

- Click on "Setup" icon
- In ODBC Microsoft Access 2.0 Setup window click on "Select..." within the dialog box. See Figure 3 below.

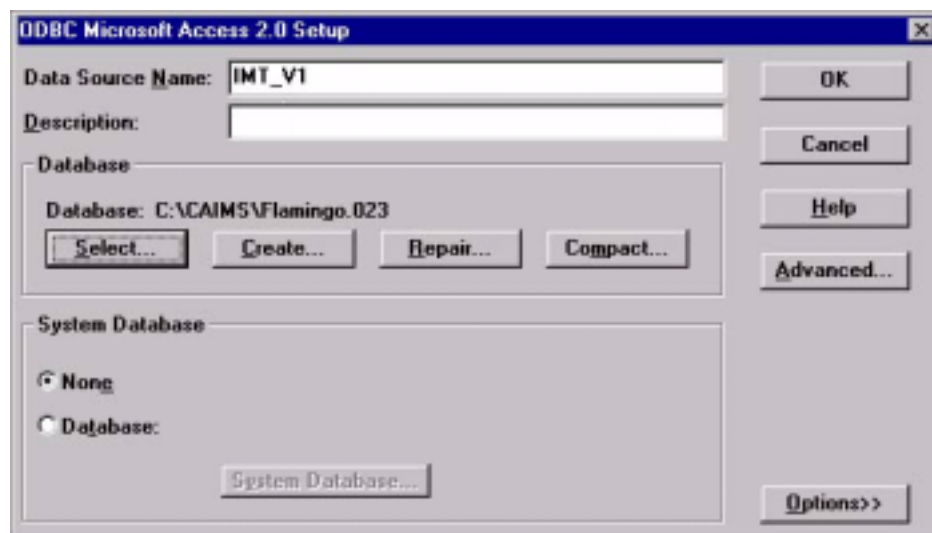


Figure 3

- And look for "Flamingo.023" under the "c:\CAIMS" folder. See Figure 4 below.

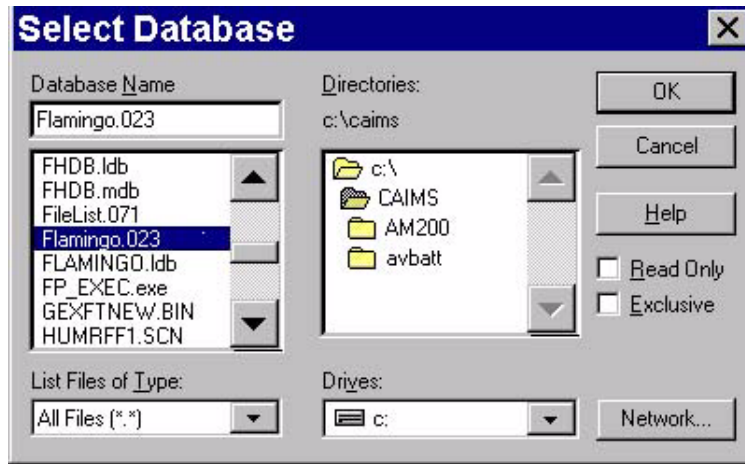


Figure 4

- Click on "OK"
- If an error message appears regarding the configuration process failing, select "Cancel" on the Error message window. See Figure 5 below.

Note: Even if you have selected "Cancel" on the Error message window, the previous update of the "IMT Fault Code Look up" has been properly executed.

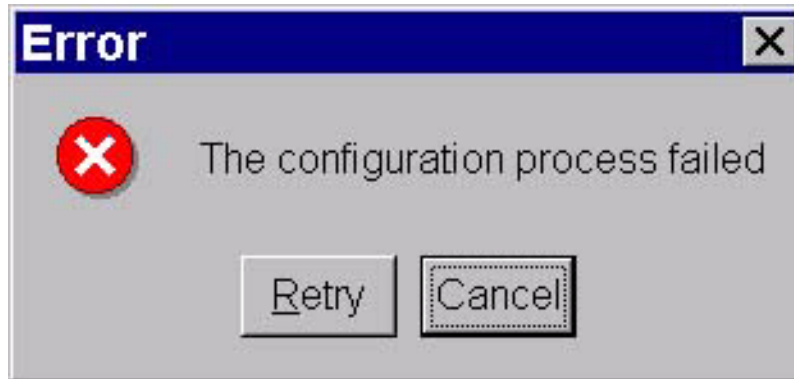


Figure 5

- On the Data Sources window select "Close" (refer to Figure 2) to exit the ODBC manager. ●

CAIMS Hints and Tips #7 – CAIMS Error Messages

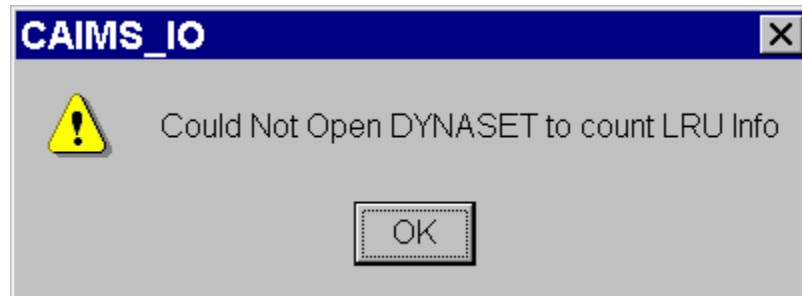
Eff. Global Express Aircraft

By Dominique Lessard – Customer Support Engineering

Over the past months, numerous PMATs with LDI (CAIMS database i.e. Flamingo.023, Peacock.024) corrupted messages were returned for repair. As a result, the PMAT is among the top ten list of unscheduled removals. Unfortunately, these removals could have been prevented by manually re-installing the LDI and/or the FHDB database.

In order to reduce the number of removals, thereby preventing the wait for a replacement unit, follow the procedures below if one of the messages is displayed during CAIMS power up. FIM tasks will be created to facilitate the information accessibility.

See below an example of how the messages are displayed.



Here is a list of the error messages that could easily be fixed in service:

ODBCException Data Has Changed

Could not open Dynaset to count LRU Info

CDBException: Data has changed, operation stopped

CDBException could not be deleted

Could not open the file "I"

FDE – Run-time error 3051 The Microsoft jet database engine cannot open the file C:\CAIMS\PEACOCK.024. It is already opened exclusively by other user or you need permission to view its data

Follow this procedure to replace the LDI:

Note that the installation needs to be done manually since the current LDI has already been installed.

Make sure to follow each step carefully.

1. Make sure all the applications and "CAIMS DLL" manager are not running on the taskbar
2. Insert the Technical Publications CD-ROM which contains the LDI currently in use in the CD-ROM drive.
3. On the task bar, select "Start-Programs – Windows NT Explorer"
4. In the Windows NT Explorer, copy the LDI from the CD-ROM as follows:
 - Select the D drive
 - Under the D drive select the CAIMS directory
 - Under the CAIMS directory, select the LDI
 - Select "Edit-Copy"
5. In the Windows NT Explorer, paste the LDI on the hard drive as follows:
 - Select the C drive
 - Under the C drive, select the CAIMS directory
 - Select "Edit-Paste"

CAIMS Hints & Tips # 7... Cont

6. In the Windows NT Explorer, select "File-Properties" and deselect the "Read-Only" attribute.

7. In the Windows NT Explorer, open ODBC administrator as follows:

Select C drive

Under "Tools" folder

Select ODBC Administrator

In the "Data Sources" window select DCT_V6

Click on "Setup..."

In the ODBC Microsoft Access 2.0-setup window click on the "Select..."

Look for "Peacock.024" (or the LDI currently in use) under the CAIMS folder

Click OK

Select "Cancel" on the error message

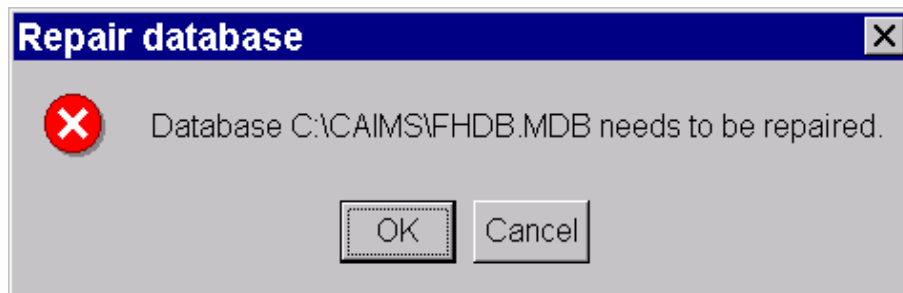
Select "Close"

8. Close Windows NT Explorer.

9. Restart CAIMS.

Another file frequently corrupted on the PMAT is the FHDB.mdb. This file is a database that needs to be valid for CAIMS functionality

Here is an example of the message you could have:



Follow this procedure to replace the FHDB database:

Keyboard required.

1. Make sure all the applications and CAIMS DLL manager are not running.

2. On the task bar, select "Start-Programs – Windows NT Explorer

3. In the Windows NT Explorer, open RestoreFHDB.bat as follows:

Select C drive

Under Tools folder

Select Restore FHDB.bat

Follow the instructions on the screen

Restart CAIMS ●

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in the industry by understanding
and fulfilling customer needs”*
